

THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: INHALATION II

Chairperson: Joe L. Mauderly, Inhalation Toxicology Research Institute, Albuquerque, NM

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 10:00 a.m.—11:30 a.m.

- #1378: **USE OF BRONCHOALVEOLAR LAVAGE FLUID (BALF) ANALYSIS TO COMPARE PULMONARY RESPONSES CAUSED BY TWO ALUMINUM SALTS AFTER ACUTE EXPOSURE.** S T Springer, J K Maurer, *K E Driscoll*. The Procter & Gamble Co., Cincinnati, OH.
- #1379: **MONITORING OF ADVERSE HEALTH EFFECTS AND INDICATORS OF EXPOSURE IN WORKERS OCCUPATIONALLY EXPOSED TO ACRYLAMIDE.** C J Calleman¹, H Deng², E Bergmark¹, G Tian³, Y Wu², S Zhang², *L G Costa*¹, and F He².
¹Department of Environmental Health, Univ. of Washington, Seattle, WA; ²Institute of Occupational Medicine, Chinese Academy of Preventive Medicine, Beijing, and ³Institute of Occupational Health, Xinxiang, China.
- #1380: **ODOR EVALUATION AND PARTICULATE/VAPOR EMISSION STUDIES OF FMC TREATED BOOKS.** E A Mount, *M L Weiner*, R C Reardon*, M Alvarez, FMC Corporation, Princeton, NJ, *TKL Research Inc., Maywood, NJ
- #1381: **KINETIC EVALUATION OF HALON 1211, HCFC 123, HCFC 142B AND HCFC 124 USING GAS UPTAKE METHODS.** D K Hoover, K O Yu, R K Black, G W Jepson, and *J W Fisher*. Toxicology Division (OL-AL/OET), Armstrong Laboratory, WPAFB, OH.
- #1382: **COMPARISON OF WALL MASS FLUX SIMULATIONS WITH FLOW TANK RESULTS AND APPLICATION TO INHALATION TOXICOLOGY.** K T Morgan¹, B Asgharian¹, J S Ultman², J S Kimbell¹, and A Dasgupta¹. ¹CIIT, Research Triangle Park, NC; ²Pennsylvania State University, University Park, PA. Sponsor: *F J Miller*.
- #1383: **EFFECT OF DIFFUSION OF REACTIVE GASES ON INHALATION EXPOSURE: THE CASE OF COMPLETE ADSORPTION ON THE FUR.** *O Moss*, and B Asgharian. CIIT, Research Triangle Park, NC.
- #1384: **CHRONIC INHALATION TOXICITY OF ETHYLENE OXIDE IN MONKEYS—LENS OPACITIES AT TERMINATION OF EXPOSURE AND 10 YEAR FOLLOW UP.** D W Lynch, D D Sharpnack, E F Krieg, Jr., K Ketring*, and *T R Lewis**. NIOSH, Experimental Toxicology Branch, Cincinnati, OH and *Private Consultant, Cincinnati, OH.
- #1385: **EFFECTS OF DOSE-RATE ON CHRONIC TOXICITY OF ETHYLENE OXIDE: PRELIMINARY REPORT.** W J Moorman, J C Clark, P B Shaw, T Ong, S M Schrader, D W Lynch, and *T R Clark*. NIOSH, Experimental Toxicology Branch and T R Lewis, Private Consultant, Cincinnati, OH.
- #1386: **A 90-DAY SUBCHRONIC INHALATION TOXICITY STUDY OF 1, 5-HEXADIENE IN THE RAT.** *G B Kolesar*, S D Crofoot, *W H Siddiqui*, G J Sibert and *J J Clary*. Dow Corning Corporation, Midland, MI.
- #1387: **COMPARISON OF SENSITIVITY FOR VARIOUS STRAINS OF MICE BASED ON RD50 VALUES OBTAINED FROM EXPOSURE TO AEROSOLIZED ETHYLBENZENE.** L A Boylstein, *M F Stock*, and *Y Alarie*. Univ. of Pittsburgh, Pittsburgh, PA.
- #1388: **SUBCHRONIC TOXICITY AND TERATOLOGY OF HCFC-124 I RATS.** L A Malley, L Alvarez, S R Frame, C Carakostas, *H J Trochimowicz*, and *G M Rusch*. The Du Pont Company, Inc. Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE; and Allied-Signal Co., Morristown, NJ. Sponsor: *J C Cook*.
- #1389: **DIMETHYLETHOXYLANE (DMES) ACUTE AND TWO-WEEK VAPOR INHALATION TOXICITY STUDIES IN FISCHER 344 RATS.** *D E Dodd*^a, *B O Stuart*^a, S J Rothenberg^a, M Kershaw^b, *J T James*^c, and *C W Lam*^d. ^aManTech Environmental Technology, Inc., Dayton, OH., ^bBrookhaven National Lab, Upton, NY; ^cNASA-JSC and ^dKRUG Life Sciences, Houston, TX.
- #1390: **TUMORIGENIC EVALUATION OF JET FUELS JP-TS AND JP-7 FOLLOWING VAPOR INHALATION EXPOSURE.** *E R Kinkead*¹, *C L Gaworski*², C D Flemming¹, R Harris³, W Witt³, H Davis³, and R Schmidt³. ¹ManTech Environmental Technology, Inc., Dayton, OH., ²Univ. of California, Irvine, ³USAF School of Aerospace Medicine, Brooks Air Force Base, TX.
- #1391: **TWO FOUR-WEEK INHALATION TOXICITY STUDIES WITH HFC-143A IN RATS.** S R Frame, D P Kelly, M C Carakostas, and *D B Warheit*. Du Pont, Haskell Lab., Newark, DE.
- #1392: **SUBCHRONIC INHALATION TOXICITY STUDY WITH FC-C-51-12 IN RATS.** G P Sykes, M C Carakostas, L Alvarez, and *D B Warheit*. Du Pont, Haskell Lab., Newark, DE.
- #1393: **PARTIALLY VAPORIZED FULL RANGE CATALYTICALLY REFORMED NAPHTHA: SUBCHRONIC AND DEVELOPMENTAL TOXICITY STUDIES IN RATS.** *W E Dalbey*, M H Feuston, *C V Kommineni*, S L Kerstetter, and T A Roy. Environmental and Health Sciences Laboratory, Mobil Oil Corporation, Princeton, NJ.
- #1394: **CLEARANCE OF POLYCYCLIC AROMATIC HYDROCARBONS FROM THE ALVEOLAR REGION OF THE RESPIRATORY TRACT.** P Gerde, B A Muggenburg, M D Hoover, and *R F Henderson*. Inhalation Toxicology Research Institute, Albuquerque, NM.

- #1395 **COMPARATIVE TOXICOKINETICS OF BUTADIENE IN RODENTS AND MONKEYS.** *A R Dahl¹, P S Sabourin¹, W E Bechtold, T Burka², and R F Henderson¹.* ¹Inhalation Toxicology Research Institute, Albuquerque, NM, ²National Toxicology Program, Research Triangle Park, NC.
- #1396 **A PHYSIOLOGICALLY-BASED TOXICOKINETIC MODEL FOR INHALED 1,3-BUTADIENE.** *G A Csanady, T Leavens, M Gargas and J Bond.* CIIT, RTP, NC.
- #1397 **INFLUENCE OF INDIVIDUAL ANIMAL EXHALED AIR ON INHALED VAPOR CONCENTRATION IN A DIRECTED FLOW NOSE ONLY EXPOSURE SYSTEM.** *B Asgharian and O Moss.* CIIT, RTP, NC.
- #1398 **CARBOXYHEMOGLOBIN LEVELS IN HUMANS: EFFECTS OF ALTITUDE.** *J J McGrath, R M Schreck and P Lee.* Department of Physiology, Texas Tech University HSC; Biomedical Science Department and General Motors Research Laboratories.
- #1399 **ACUTE AND TWO-WEEK INHALATION TOXICITY STUDIES WITH DIAMINOHEXANE ISOMERS IN RATS.** *D P Kelly, J F Hansen and G T Makovec.* Du Pont, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE. Sponsor: *G L Kennedy.*
- #1400 **RESPIRATORY EFFECTS OF A SINGLE EXPOSURE TO THERMAL DECOMPOSITION PRODUCTS FROM POLYMERS IN GUINEA PIGS.** *K Detwiler, R D Thompson, and M Schaper.* University of Pittsburgh, Pittsburgh, PA.
- #1401 **THE EFFECTS OF SULFURIC ACID ON NASAL LAVAGE AND PULMONARY FUNCTION IN SENIOR ASTHMATICS.** *J Q Koenig, K Dumler, V Rebolledo, P V Williams, W E Pierson.* University of Washington, Seattle, WA. Sponsor: *D L Eaton.*
- #1402 **14-DAY INHALATION STUDY IN RATS, USING AGED AND DILUTED SIDESTREAM SMOKE FROM A REFERENCE CIGARETTE.** *C R E Coggins, P H Ayres, A T Mosberg, M W Ogden, D J Doolittle, C K Lee, J W Sagartz and A W Hayes.* R.J. Reynolds Tobacco Co., Winston-Salem, NC and Veritas, Burlington, NC.
- #1403 **COMPARATIVE INHALATION STUDY IN RATS USING CIGARETTES CONTAINING TOBACCO EXPANDED WITH CFC-11 OR HCFC-123.** *A T Mosberg, C R E Coggins, P H Ayres, J W Sagartz and A W Hayes.* R.J. Reynolds Tobacco Co., Winston-Salem, NC, and Veritas, Burlington, NC.
- #1404 **ADDITIVITY OF EFFECT OF IRRITANT CHEMICALS RELEASED BY COMMERCIAL PRODUCTS AS OFFGASSING.** *R C Anderson.* Anderson Laboratories, Dedham, MA.
- #1404-A **TOXICOLOGICAL EFFECTS OF INHALATION EXPOSURE TO STYRENE IN RATS AND MICE.** *J H Roycroft¹, T J Mast², H A Ragan, S L Grumbein, R A Miller, B J Chou.* ¹NIEHS/NTP, RTP, NC. ²Battelle Northwest, Richland, WA. Sponsor: *G N Rao.* (This is abstract #1566 in *The Toxicologist*.)

THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: METALS TOXICOLOGY III

Chairperson: Lyle B. Sasser, Battelle Pacific Northwest Laboratories, Richland, WA

Displayed: 8:30 a.m.—11:30 a.m.
 Attended: 8:30 a.m.—10:00 a.m.

- #1405 **CHOROID PLEXUS SEQUESTERS MANGANESE AND CONTROLS ITS MOVEMENT FROM BLOOD TO CSF.** *R T Ingersoll and H V Aposhian.* Dept. of Molecular and Cellular Biology, University of Arizona, Tucson, AZ.
- #1406 **IN VITRO LOADING OF APOFERRITIN.** *D de Silva, D W Reif, D M Miller, and S D Aust.* Biotechnology Center, Utah State University, Logan, UT.
- #1407 **ALUMINUM LACTATE INCREASES HEPATIC HEME OXYGENASE ACTIVITY IN MICE.** *B Fulton, and E H Jeffrey.* Institute for Environmental Studies and Division of Nutritional Sciences, University of Illinois, Urbana, IL.
- #1408 **AN ARSENITE-BINDING PROTEIN IN RABBIT AND MOUSE LIVER CYTOSOL.** *G M Bogdan and H V Aposhian*.* Departments of Pharmacology and Toxicology and *Molecular and Cellular Biology, University of Arizona, Tucson, AZ.
- #1409 **GLUCOSE METABOLISM IN LIVERS OF GUINEA PIGS PERFUSED WITH CHELATING AGENTS AND A NEWLY SYNTHESIZED ANTIDOTE, BAPSA, AFTER A SINGLE INJECTION OF ARSENIC.** *F X Reichl, H Kreppel, H Muckter and W Forth.* Walther Straub-Institute for Pharmacology and Toxicology, Munchen, FRG. Sponsor: *C D Klaassen.*
- #1410 **TOXICITY AND METABOLISM OF INDIUM ARSENIDE.** *H Yamauchi and B A Fowler.* Univ. of Maryland, Program in Toxicology, Baltimore, MD.
- #1411 **EFFECTS OF INDIUM AND ARSENIDE ON HEME BIOSYNTHETIC PATHWAY.** *E A Conner, H Yamauchi, B A Fowler.* Univ. of Maryland. Prog. in Toxicol., Baltimore, MD.
- #1412 **THE INDUCTION OF STRESS PROTEINS AFTER ADMINISTRATION OF INDIUM ARSENIDE IN HAMSTER KIDNEY PROXIMAL TUBULE EPITHELIAL CELLS.** *B A Fowler, H Yamauchi, M Akkerman and M M Lipsky.* Univ. of Maryland, Program in Toxicology and Pathology, Baltimore, MD.

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- #1413 INTERACTION OF INORGANIC ARSENICALS WITH THIOLS IN RAT BLOOD. S L Winski, K Hatlelid and D E Carter, Univ. of Arizona, Dept. Pham. and Tox., Tucson, AZ.
- #1414 STRESS PROTEIN SYNTHESIS INDUCED BY CADMIUM-CYSTEINE IN RAT KIDNEY. P L Goering, Center for Devices and Radiological Health, Food and Drug Administration, Rockville, MD
- #1415 UPTAKE AND TOXICITY OF CADMIUM BY PRIMARY CULTURES OF RAT RENAL PROXIMAL TUBULE CELLS. L R Cantilena, Jr. and D J Nix. Div. of Clin. Pharmacology, Dept of Pharmacology, Uniformed Services University, Bethesda, MD. Sponsor: A L Moore.
- #1416 COMPARISON OF CADMIUM CYTOTOXICITY IN MOUSE TESTICULAR CELL LINES. R A Barter and M P Waalkes. NCI-FCRDC, Frederick, MD.
- #1417 GLUTATHIONE DEPLETION, REPLETION AND CADMIUM CYTOTOXICITY IN ROS 17/2.8 CELLS. D J Thomas, C R Angle, S A Swanson, and T C Caffrey. Department of Pediatrics, University of Nebraska Medical Center, Omaha, NE.
- #1418 MECHANISMS OF THE RELATIVE SENSITIVITY TO Cd AND Pb OF HUMAN (HOS TE 85) AND RAT (ROS 17/2.8) OSTEOSARCOMA CELL LINES. C R Angle, D J Thomas And S A Swanson. Department of Pediatrics, University of Nebraska Medical Center, Omaha, NE.
- #1419 CADMIUM UPTAKE THROUGH CALCIUM CHANNELS AND ACTIVATION OF CALMODULIN IN NEURONAL CELLS. A G Kanthasamy, T Mills, J L Borowitz, G E Isom. Dept. of Pharmacology and Toxicology, Sch. of Pharmacy and Pharmacal Sciences, Purdue Univ., W. Lafayette, IN.
- #1420 CADMIUM INCREASES EXPRESSION OF C-MYC AND C-FOS PROTO-ONCOGENES IN HUMAN DERMAL FIBROBLASTS. R M Lyu, Y Zhuang, V Pijuan, and J B Smith. Department of Pharmacology, University of Alabama at Birmingham, Birmingham, AL.
- #1421 CADMIUM EVOKES CYCLIC AMP PRODUCTION BY TRIGGERING A CALCIUM-MOBILIZING RECEPTOR THAT ZINC REPRESSES. V Pijuan, L Smith, and J B Smith. Department of Pharmacology, University of Alabama at Birmingham, Birmingham, AL.
- #1422 EVIDENCE FOR AN EARLY EFFECT OF Cd ON THE KIDNEY IN OVARIETOMIZED (OV) MICE. M H Bhattacharyya, C Kuhn, C H Wang, E S Moretti, D P Peterson. Argonne National Laboratory, Argonne, IL.
- #1423 DOES CADMIUM INCREASE CALCIUM RELEASE FROM BONE IN PREGNANT/LACTATING MICE ON A LOW CALCIUM DIET? C H Wang and M H Bhattacharyya. Argonne National Laboratory, Argonne, IL.
- #1424 EFFECTS OF PROGESTERONE PRETREATMENT ON CADMIUM TOXICITY IN THE MALE FISCHER RAT. N Shiraishi, R A Barter, and M P Waalkes. Lab. of Comparative Carcinogenesis, NCI-FCRDC, Frederick, MD.
- #1425 EFFECTS OF LONG-TERM CADMIUM (Cd) ADMINISTRATION ON THE HEPATIC AND RENAL FUNCTIONS IN RATS. H Ohta, Y Seki, S Imamiya, and H Yoshikawa. Dept. of Health Administration. School of Hygienic Sciences, Kitasato University, JAPAN. Sponsor: M G Chierian
- #1426 CADMIUM AND METALLOTHIONEIN (MT) LEVELS IN LIVER, KIDNEY AND LUNG OF SPRAGUE-DAWLEY (CD) RATS AFTER 1-MONTH OF INHALATION EXPOSURE TO CADMIUM CHLORIDE (CdCl₂) DUST AND AFTER A 1-MONTH HIATUS. B R Dudek¹, T A Kaempfe¹, M V Roloff¹, C D Klaassen². ¹Environmental Health Laboratory, Monsanto Company, St. Louis, MO; ²University of Kansas Medical Center, Kansas City, KS.
- #1427 BLOOD CADMIUM (Cd) LEVELS IN WORKERS DETERMINED BY A NEW SENSITIVE ASSAY. N Sacco-Gibson, D Maloney, C H Wang, D P Peterson, and M H Bhattacharyya. Argonne National Laboratory, Argonne, IL.

THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: *IN VITRO* HEPATIC TOXICITY

Chairperson: Mary T. Moslen, University of Texas Medical Branch, Galveston, TX

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 10:00 a.m.—11:30 a.m.

- #1428 EFFECT OF VOLATILE ANESTHETICS ON GUINEA PIG LIVER SLICES FROM LIVERS PRESERVED IN UNIVERSITY OF WISCONSIN SOLVENT. H Ghantous, E Mata, S Morgan, A J Gandolfi, K Brendel. Department of Anesthesiology, University of Arizona, Tucson, AZ.
- #1429 CHRONOLOGY OF TOXIC EVENTS PRODUCED BY HALOTHANE IN GUINEA PIG LIVER SLICES. E Mata, H Ghantous, J Fernando, A J Gandolfi, K Brendel. Department of Anesthesiology, University of Arizona, Tucson, AZ.
- #1430 RAPID UPTAKE AND TOXICITY OF M-741 IN RAT HEPATIC SLICES. S J Waters, J McNeill, T C Spaulding, K Brendel, and A J Gandolfi. Anaquest Inc., Murray Hill, NJ and Department of Pharmacology, University of Arizona, Tucson, AZ.

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- #1431 **IN VITRO EVALUATION OF ALLYL ALCOHOL TOXICITY IN LIVER SLICES: SPECIES COMPARISON AND MECHANISM STUDIES.** D W Alberts, L Allen, S Finkbinder, L Lang, K P Keenan, and P F Smith. Merck Sharp and Dohme Research Laboratories, West Point, PA.
- #1432 **COLD PRESERVATION OF BIOTRANSFORMATION ACTIVITY IN DOG LIVER SLICES.** L T Church, S M Wishnies, A J Gandolfi and K Brendel. Department of Pharmacology, University of Arizona College of Medicine, Tucson, AZ.
- #1433 **COLD- AND CYRO-PRESERVATION OF DOG LIVER AND KIDNEY SLICES.** J T Sanuik, R L Fisher, S J Carter, A J Gandolfi, and K Brendel. Dept. of Pharmacology, Univ. of Arizona, Tucson, AZ.
- #1434 **THE IN VITRO TOXICITY OF COPPER ON HEPATOCYTES FROM STREPTOZOTOCIN-INDUCED DIABETIC RATS.** W K Liu, C C Wong¹, T B Ng² and J Hou. Departments of Anatomy, Physiology¹ and Biochemistry², The Chinese University of Hong Kong, Shatin, Hong Kong. Sponsor: L Chang.
- #1435 **TOXICITY OF STREPTOZOTOCIN IN ISOLATED RAT HEPATOCYTES.** K S Park¹, R B Kroll², C K Moon¹ and J H Chung¹. College of Pharmacy, Seoul Natl. Univ., Seoul, Korea¹ and MD. Dept. Environment, Baltimore, MD².
- #1436 **COMPARISON OF FOUR PARAMETERS FOR THE ESTIMATION OF CYTOTOXICITY ON HEPATOCYTES IN CULTURE.** R Roguet, J Cotovio, K G Dossou, A Rougier. L'Oreal Laboratoires de Recherche Fondamentale, Aulnay sous Bois, France. Sponsor: J G Descotes.
- #1437 **INVOLVEMENT OF THE PREGNENOLONE 16 α -CARBONITRILE (PCN)-INDUCIBLE CYTOCHROME P-450 IN THE CYTOTOXICITY OF ENALAPRIL (EN) TOWARDS PRIMARY RAT HEPATOCYTES.** M Jurima-Romet, H S Huang and C J Paul. Bureau of Drug Research, Health and Welfare Canada, Ottawa, ON, Canada. Sponsor: H S Buttar.
- #1438 **METABOLISM OF BENZENE AND TRANS, TRANS-MUCONALDEHYDE IN THE ISOLATED PERFUSED LIVER TO TRANS, TRANSMUCONIC ACID.** V. L. Grotz, S Ji, B D Goldstein and G Witz. Joint Graduate Program in Toxicology, Rutgers University/UMDNJ-Robert Wood Johnson Medical School, Piscataway, N.J.
- #1439 **RETINOID CONTENT AND COLLAGEN PRODUCTION OF HEPATIC LIPOCYTES IN PRIMARY CULTURE.** T Sato*, R Gordon, R Kato, and C Tyson. *Dept. Pharmacol., Keio Univ., Tokyo, Japan and SRI International, Menlo Park, CA.
- #1440 **CELL-CELL INTERACTIONS IN LIVER: ROLE OF ATP AND EICOSANOIDS IN THE ACTIONS OF ADENOSINE.** S Nukina and R G Thurman. Laboratory of Hepatobiology, University of North Carolina at Chapel Hill, NC.
- #1441 **SERUM AND HEPATIC CARBOXYLESTERASE ACTIVITY IN MICE FOLLOWING HEPATOTOXIC ADMINISTRATION OF ACETAMINOPHEN AND CARBON TETRACHLORIDE.** A VillaLobos, T L Huang and B D Hammock. Depts. of Entomology and Environmental Toxicology, Univ. of California, Davis, CA.
- #1442 **PREVENTION OF CARBON TETRACHLORIDE HEPATOTOXICITY IN THE RAT IN VIVO BY GADOLINIUM CHLORIDE TREATMENT.** M J Edwards^a, F C Kauffman^b, and R G Thurman^a. ^aLab of Hepatobiol. and Toxicol., Dept. of Pharmacol., Univ. of North Carolina, Chapel Hill, NC and ^bLab. Cellular and Biochem. Toxicol., Rutgers Univ., Piscataway, NJ.
- #1443 **TAUROURSODEOXYCHOLATE INHIBITS F-ACTIN ALTERATION INDUCED BY CHOLESTATIC AGENTS IN ISOLATED RAT HEPATOCYTE COUPLETS.** N Thibault and F Ballet. Rhone-Poulenc Rorer. Drug Safety Dept., Vitry/Seine, France. Sponsor: C Bismuth.
- #1444 **INFLUENCE OF ALPHA₂-MACROGLOBULIN (A₂M) ON THE DISPOSITION OF RECOMBINANT HUMAN NERVE GROWTH FACTOR (rhNGF) IN THE ISOLATED PERFUSED RAT LIVER.** G DeGuzman, T Hotaling, and P Cossum. Department of Safety Evaluation, Genentech Inc., S. San Francisco, CA.
- #1445 **SULFOTRANSFERASE IN HUMAN HEPATOCYTES: EFFECTING METABOLISM AND BINDING OF 2-ACETYLAMINOFLUORENE (AAF).** D K Monteith. Parke-Davis Pharm. Res. Div., Warner-Lambert Co., Ann Arbor, MI.
- #1446 **FURAN-INDUCED GLUTATHIONE DEPLETION AND CYTOLETHALITY IN FRESHLY ISOLATED RAT HEPATOCYTES.** M A Carfagna, S D Held, C E Cosgrove and G L Kedderis. CIIT, RTP, NC.
- #1447 **COMPARISON OF THE CYTOTOXICITY AND EFFECTS ON PEROXISOMAL AND MICROSOMAL ENZYME ACTIVITIES OF SOME PYRAZINES IN PRIMARY RAT HEPATOCYTE CULTURES.** J A Beamand, R J Price, and B G Lake. BIBRA Toxicology International, Carshalton, Surrey, England.
- #1448 **A COMPARISON BETWEEN RAT LIVER SLICES, HEPATOCYTES AND THE WHOLE ANIMAL.** S J Carter, R L Fisher, J T Sanuik, R P Hanzlik*, and A J Gandolfi, and K Brendel. Dept. of Pharmacology, Univ. of Arizona, Tucson, AZ, * Dept. of Medicinal Chemistry, University of Kansas, Lawrence, KS.
- #1449 **EFFECT OF CULTURE CONDITIONS ON THE MAINTENANCE OF PHASE I METABOLIC ACTIVITIES OF PRIMARY RAT HEPATOCYTES IN VITRO.** J Zurlo, L M Arterburn*, J M Miller, R M Barry*, H He and J D Yager. Division of Toxicological Sciences, Johns Hopkins School of Hygiene Public Health, Baltimore, MD and *W.R. Grace and Co.-Conn., Research Division, Columbia, MD.
- #1450 **PRECISION CUT RAT LIVER SLICES AS A MODEL SYSTEM TO STUDY THE MECHANISM OF TOXICITY OF PHENOLIC COMPOUNDS.** D C Thompson¹, R Fisher and K Brendel. ¹Texas A&M University, College Station, TX and University of Arizona, Tucson, AZ.

#1451

COLD- AND CYRO- PRESERVATION OF HUMAN LIVER, KIDNEY, PANCREAS AND LUNG SLICES FOR RESEARCH. R Fisher, S J Carter, J T Sanuik, and K Brendel. Dept. of Pharmacology, Univ. of Arizona, Tucson, AZ.

THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: *IN VITRO* TOXICITY ASSESSMENT

Chairperson: Shayne C. Gad, Becton Dickinson, Research Triangle Park, NC

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 8:30 a.m.—10:00 a.m.

- #1452 USE OF THE ISOLATED PERFUSED RAT LUNG MODEL TO STUDY PULMONARY EFFECTS OF TOXINS. E R Rivera, J G Pace and K A Bostian. US Army Medical Research Institute of Infectious Diseases, Frederick, MD. Sponsor: D A Creasia.
- #1453 LASER SCANNING CONFOCAL MICROSCOPY (LSCM) OF MITOCHONDRIAL MEMBRANE POTENTIAL, CELL SWELLING, LYSOSOMAL DISRUPTION, AND PLASMA MEMBRANE INTEGRITY DURING CHEMICAL HYPOXIA IN CULTURED CARDIAC MYOCYTES. E Chacon, J M Bond, J M Reese, G Zahrebelski, A-L Nieminen, B Herman and J J Lemasters. Dept. of Cell Biology and Anatomy, Univ. of North Carolina, Chapel Hill, NC.
- #1454 HUMAN MAMMARY EPITHELIAL CELLS AS AN *IN VITRO* MODEL TO STUDY XENOBIOTIC MODULATION OF GAP JUNCTIONAL COMMUNICATION. B Lockwood, B V Madhukar, H L Rupp, and J E Trosko. Department of Pediatrics/Human Development, Michigan State University, East Lansing, MI.
- #1455 A HUMAN ENDOTHELIAL PRIMARY CELL CULTURE MODEL TO STUDY GAP JUNCTION PROTEIN AND FUNCTION: CHEMICAL MODULATION OF GAP JUNCTIONAL INTERCELLULAR COMMUNICATION. J E Trosko, B V Madhukar, H L Rupp, E Dupont, and B Lockwood. Department of Pediatrics/Human Development, Michigan State University, East Lansing, MI.
- #1456 THREE-DIMENSIONAL CULTURE OF RAT THYROID (FRTL-5) FOLLICULAR CELLS. A Ozaki, J E Sagartz and C C Capen. Department of Veterinary Pathobiology, The Ohio State University, Columbus, OH. Sponsor: V L Carter.
- #1457 UTILIZATION OF PRECISION-CUT RABBIT RENAL CORTICAL SLICES TO STUDY THE NEPHROTOXICITY OF METALLIC TOXICANTS IN CHEMICAL WASTE DUMPS. R L Keith, K Brendel, A J Gandolfi, T P Lowe, Q Fernando. Department of Pharmacology, University of Arizona, Tucson, AZ.
- #1458 TOXICITY OF PROBENECID (PRO) AND ORGANIC ANIONS TO RENAL CELL CULTURES. D Beach and S M Ford. Toxicology Program, St. John's Univ., Jamaica, NY.
- #1459 EVALUATION OF CADMIUM—ALBUMIN BINDING BY AN *IN VITRO* TOXICITY ENDPOINT ASSAY. J M Frazier. Johns Hopkins University, Baltimore, MD.
- #1460 THE EFFECT OF CELL TYPE ON CHEMICAL TOXICITY IN THE NEUTRAL RED CYTOTOXICITY ASSAY. D W Bombick and D J Doolittle. R J Reynolds Tobacco Company, Winston-Salem, NC.
- #1461 *IN VITRO* PREDICTABILITY OF SHAMPOO TOXICITY USING STANDARDIZED CELLS AND REAGENTS. C W Kemp¹, J A Darner¹, T J Stephens², and P Nyberg³. ¹BioWhittaker, Inc., Walkersville, MD; ²In Vitro Alternatives, Inc., Carrollton, TX; and ³Redmond Products, Inc., Chanhassen, MN. Sponsor: G Reddy.
- #1462 ANALYSIS OF CELLULAR TOXICITY USING *IN VITRO* FLUORESCENCE ASSAYS. R C Burghardt, R H Bailey, B A Clement, and T D Phillips. Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX.
- #1463 THE DESIGN AND DEVELOPMENT OF A SOLARIUM CHAMBER TO STUDY PHOTOTOXIC AND PHOTOALLERGIC SKIN REACTIONS *IN VITRO*. J Acevedo, M Crocker, J Van Duzer, and C P Kelly. Ropak Laboratories, Irvine, CA.

THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: CARCINOGENESIS

Chairperson: Robert C. Smart, North Carolina State University, Raleigh, NC

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 10:00 a.m.—11:30 a.m.

- #1464 PATHOLOGY OF RENAL TUBULAR CELL DYSPLASTIC FOCI AND NEOPLASMS INDUCED BY BARBITAL SODIUM, A NONGENOTOXIC RENAL CARCINOGEN AND NEPHROTOXIN. H Uno, Y Kurata, B A Diwan and J M Ward. Laboratory of Comparative Carcinogenesis and PRI/DynCorp., NCI-FCRDC, Frederick MD. Sponsor: M P Waalkes
- #1465 SUBCHRONIC TOXICITY OF BENZYLSELENOCYANATE (BSC) AND 1,4-PHENYLENEBIS (METHYLENE SELENOCYANATE) (XSC) IN F344 RATS. C C Conaway, P Upadhyaya, C L Meschter, and K El-Bayoumy. American Health Foundation, Valhalla, NY.

- #1466 **REDUCTION OF AFLATOXIN M₁ RESIDUES IN CAPRINE MILK USING HYDRATED SODIUM CALCIUM ALUMINOSILICATE.** J A Ellis, R B Harvey, E E Smith, L F Kubena, B A Clement, R H Bailey, and T D Phillips. College of Veterinary Medicine, Texas A&M University and ¹USDA/ARS Food Animal Protection Research Laboratory, College Station, TX; ²Cooperative Agricultural Research Center, Texas A&M University, Prairie View, TX.
- #1467 **EFFECTS OF SODIUM BUTYRATE ON CHEMICALLY TRANSFORMED TRACHEAL CELLS.** M J W Chang, C C Tsai, and Y C Hsieh. Chang Gung Med. Coll., Taiwan, ROC. Sponsor: T V Reddy.
- #1468 **FREE RADICALS AND CANCER: INHIBITION OF RAT MAMMARY CARCINOGENESIS BY THE FREE RADICAL SCAVENGER, 2-MERCAPTOETHYLAMINE (CYSTEAMINE).** D L McCormick. Life Sciences Dept., IIT Research Inst., Chicago, IL.
- #1469 **ROLE OF FREE RADICALS IN THE INHIBITION OF CHEMICAL CARCINOGENESIS IN MOUSE SKIN BY FRACTIONS OF GREEN TEA POLYPHENOLS (GTP).** J D Laskin, J M Mitchell, D E Heck, C T Ho, M T Huang, Z Y Wang and A H Conney. UMDNJ-Robert W. Johnson Medical School and Rutgers University, Piscataway, NJ.
- #1470 **VITAMIN E INHIBITS LIPID PEROXIDATION AND TUMOR PROMOTION INDUCED BY ETHANOL.** S I Mufti. Department of Pharmacology and Toxicology, and Arizona Cancer Center, University of Arizona Health Sciences Center, Tucson, AZ. Sponsor: I G Sipes.
- #1471 **DOSIMETRY ANALYSIS OF THE 1,4-DIOXANE CARCINOGENICITY.** J W Holder. Office of Health and Environmental Assessment, ORD, US EPA, Washington, DC. Sponsor: D V Singh.
- #1472 **ARSENATE SUPPRESSION OF THE KERATINOCYTE DIFFERENTIATION MARKER, INVOLUCRIN.** D Kachinskas, J Stokes, R H Rice. Department of Environmental Toxicology, University of California, Davis, CA.
- #1473 **THAPSIGARGIN, BUT NOT TPA, DIELDRIN OR HEPTACHLOR EPOXIDE, DOWN-REGULATES CONNEXIN 43 GAP JUNCTION GENE EXPRESSION IN RAT PANCREATIC EPITHELIAL CELLS IN CULTURE.** E de Feijter, E Dupont, H L Rupp, B V Madhukar, and J E Trosko. Department of Pediatrics/Human Development, Michigan State University, East Lansing, MI.
- #1474 **EFFECT OF MODULATION OF CYCLIC AMP ON INTERCELLULAR GAP JUNCTIONAL COMMUNICATION.** T Sanner, L Roseng and E Rivedal. Inst. for Cancer Research, The Norwegian Radium Hospital, Oslo, Norway. Sponsor: E Dybing.
- #1475 **TRANSIENT EXPOSURE OF RAT LIVER EPITHELIAL CELLS TO TPA DELAYS DESENSITIZATION TO THE TUMOR PROMOTER EFFECT ON INTERCELLULAR COMMUNICATION.** B V Madhukar, B Lockwood, H L Rupp, and J E Trosko. Department of Pediatrics/Human Development, Michigan State University, East Lansing, MI.
- #1476 **EFFECTS ON GAP JUNCTIONAL COMMUNICATION BETWEEN V79 CELLS MEASURED BY METABOLIC COOPERATION AND FLUORESCENCE RECOVERY AFTER PHOTOBLEACHING.** A R Malcolm¹, L J Mills², K M Schultz¹, H L Rupp³, B V Madhukar³, and J E Trosko³. ¹U.S. EPA, ²Science Applications International, Narragansett, RI, and ³Dept. of Pediatrics and Human Development, Michigan State University, E. Lansing, MI.
- #1477 **INHALATION ONCOGENICITY STUDY OF REFRACTORY CERAMIC FIBER (RCF) IN RATS—FINAL RESULTS.** L R Glass¹, R W Mast¹, T H Hesterberg², R Anderson², E E McConnell³, D M Bernstein⁴. ¹The Carborundum Co., Niagara Falls, NY; ²Manville Corp., Littleton, CO; ³Raleigh, NC; ⁴Research and Consulting Co., Geneva, Switzerland.
- #1478 **INHALATION ONCOGENICITY STUDY OF KAOLIN REFRACTORY CERAMIC FIBER (RCF) IN HAMSTERS—FINAL RESULTS.** R W Mast¹, E E McConnell³, L R Glass¹, T H Hesterberg², R Anderson² and D M Bernstein⁴. ¹The Carborundum Co., Niagara Falls, NY; ²Manville Corp., Littleton, CO; ³Raleigh, NC; ⁴Research and Consulting Co., Geneva, Switzerland.
- #1479 **32-WEEK COMPARATIVE TUMOR PROMOTION EVALUATION IN FEMALE SENCAR MICE, USING CONDENSATE FROM CIGARETTES CONTAINING TOBACCO EXPANDED WITH CFC-11 OR HCFC-123.** D R Meckley, A T Mosberg, J D deBethizy, M E Lovette, C F Moyer and A W Hayes. R.J. Reynolds Tobacco Co., Winston-Salem, NC and Veritas, Burlington, NC.
- #1480 **DIFFERENTIAL TRANSLOCATION OF PROTEIN KINASE C ISOZYMES BY TUMOR PROMOTERS IN PRIMARY CULTURES OF HUMAN MAMMARY EPITHELIAL CELLS—AN IMMUNOFLUORESCENCE ANALYSIS.** H L Rupp, B V Madhukar, and J E Trosko. Department of Pediatrics/Human Development, Michigan State University, East Lansing, MI.
- #1481 **QUINONES AS ANEUPLOIDOGENS AND CARCINOGENS: CHARACTERISTICS OF *IN VITRO* BINDING TO MICROTUBULE PROTEINS.** E Pfeiffer, and M Metzler. Dept. of Environmental Toxicology, University of Kaiserslautern, Germany. Sponsor: W Dekant.
- #1482 **DIFFERENTIAL TOXICITY OF 8-CHLORO-cAMP ON NORMAL VS NEOPLASTIC LUNG EPITHELIAL CELLS IS MEDIATED BY ITS ADENOSINE METABOLITE.** C A Lange-Carter, J J Vuillequez, and A M Malkinson. Molecular and Environmental Toxicology Program, School of Pharmacy, Univ. of Colorado, Boulder, CO.
- #1483 **COMPARISON OF SHORT-TERM BIOLOGICAL AND ANALYTICAL TESTS TO MOUSE EPIDERMAL CARCINOGENICITY BIOASSAY RESULTS.** J J Freeman, R H McKee, and K L Chasey*. Exxon Biomedical Sciences Inc., East Millston, NJ and *Exxon Research and Engineering Co., Products Research Division, Baytown, TX.
- #1484 **LACK OF CARCINOGENIC AND MUTAGENIC ACTIVITY WITH ASPHALT PRODUCTS.** C McGowan, W C Daughtrey J J Freeman and R H McKee. Exxon Biomedical Sciences Inc., East Millstone, NJ.

- #1485 **A COMPARISON OF METALLOTHIONEIN (MT) EXPRESSION IN HUMAN NORMAL AND NEOPLASTIC SALIVARY GLAND TISSUE USING IMMUNOHISTOCHEMISTRY.** P J Chauvin, M G Cherian, G P Wysocki, G A Pringle. Dept. of Pathology, The Univ. of Western Ontario, London, Ontario, Canada.
- #1486 **ISOLATION AND CHARACTERIZATION OF CELL LINES FROM FORMALDEHYDE-INDUCED RAT NASAL SQUAMOUS CELL CARCINOMAS.** E Bermudez, E A Gross, Z Chen, K T Morgan. CIIT, RTP, NC.
- #1487 **TOXIC AND MUTAGENIC EFFECTS OF STYRENE-7,8-OXIDE IN NEUROADRENERGIC PC 12 CELLS.** P Nicotera, J M Dypbukt, L G Costa, L Manzo, and S Orrenius. Department of Toxicology, Karolinska Institutet, Stockholm, Sweden.
- #1488 **CARCINOGENICITY STUDY OF SUCRALOSE HYDROLYSIS PRODUCTS (SHP) IN SPRAGUE DAWLEY RATS.** M M Yuschak¹, S W Mann¹, S J Amyes², J P Finn² and P Aughton². McNeil Specialty Products Co., New Brunswick, NJ¹ and Life Science Research Ltd., Suffolk, England². Sponsor: L A Goldsmith.
- #1489 **LONG TERM ETHANOL CONSUMPTION AND MALIGNANT DEVELOPMENT OF CHEMICALLY-INDUCED NEOPLASIA.** V Nachiappan and S I Mufti. Department of Pharmacology and Toxicology, and Arizona Cancer Center, University of Arizona Health Sciences Center, Tucson, AZ. Sponsor: I G Sipes.
- #1490 **COMPARISON OF THE POTENTIAL EFFECTS OF ATRAZINE ON THE DEVELOPMENT OF MAMMARY, PITUITARY, UTERINE, AND OVARIAN TUMORS IN SPRAGUE-DAWLEY AND FISCHER 344 FEMALE RATS.** A K Thakur, L T Wetzel, M O Tisdell and J T Stevens. Agricultural Division, CIBA-GEIGY Corporation, Greensboro, NC and Hazleton Washington, Vienna, VA.
- #1491 **SPECIES AND STRAIN SPECIFIC MECHANISMS OF MAMMARY TUMORIGENESIS IN RATS EXPOSED TO CHLOROTRIZAZINE HERBICIDES.** L T Wetzel, C Breckenridge, J T Stevens and J C Eldridge. CIBA-GEIGY Corp., Agricultural Division, Greensboro, NC and Bowman Gray School of Medicine, Winston-Salem, NC. Sponsor: M O Tisdell.
- #1492 **DIETHYLSTILBESTROL TREATMENT OF CULTURES OF HUMAN ENDOMETRIAL STROMAL CELL REPLACES SV40 LARGE T ANTIGEN FUNCTION.** L H Xu, C A Rinehart and D G Kaufman. Department of Pathology, University of North Carolina, Chapel Hill, NC.

**THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: CARDIOVASCULAR

Chairperson: Allison A. Welder, College Of Pharmacy, University Of Oklahoma, Oklahoma City, OK

Displayed: 8:30 a.m.—11:30 a.m.

Attended: 8:30 a.m.—10:00 a.m.

- #1493 **DISRUPTION OF CARDIAC MITOCHONDRIAL CALCIUM HOMEOSTASIS BY DOXORUBICIN.** L E Solem and K B Wallace. Department of Pharmacology, Toxicology Graduate Program, University of Minnesota, Duluth, MN.
- #1494 **THE EFFECTS OF COCAINE AND HYPOXIA ON POSTNATAL RAT PRIMARY MYOCARDIAL CELL CULTURES.** T J Herron, M L Kaiser, R B Melchert, and A A Welder. College of Pharmacy, University of Oklahoma Health Science Center, Oklahoma City, OK.
- #1495 **THE EFFECTS OF THE COCAINE METABOLITE BENZOYLECGONINE AND A COCAINE ANALOG(-)-3 β -(4-FLUOROPHENYL) TROPAN-2 β -CARBOXYLIC ACID METHYL ESTER TARTRATE ON POSTNATAL PRIMARY RAT MYOCARDIAL CELL CULTURES.** M L Kaiser, T J Herron, R B Melchert and A A Welder. College of Pharmacy, University of Oklahoma Health Science Center, Oklahoma City, OK.
- #1496 **ACUTE TOXICITY AND CARDIOVASCULAR EFFECTS OF 1,5-DIAZIDO-3-NITRAZAPENTANE (DANPE).** J T Houpt, E. Haight and G J Leach, Toxicology Division, U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD.
- #1497 **IS A TRIAL NATRIURETIC FACTOR INVOLVED IN ALLYLAMINE AND β -AMINOPROPIONITRILE INDUCED DIURETIC EFFECTS?** M B Trent, U R Tipnis, D Kumar, and P J Boor. Dept. of Pathology, University of Texas Medical Branch, Galveston, TX.
- #1498 **PALYTOXIN (PTX) DECREASES ACETYLCHOLINE-INDUCED RELAXATION IN RAT AORTIC RINGS.** T Taylor, G Savio-lakis*, D Yust, and G Parker. US Army Medical Research Institute of Infectious Diseases, Frederick, MD and Walter Reed Army Institute of Research, Washington, DC. Sponsor: R W Wannemacher.
- #1499 **CARDIAC EFFECTS AND TOXICOKINETICS OF A PARTIAL MUSCARINIC AGONIST IN CONSCIOUS DOGS.** B K J Leong, D A Rop, C P Sabaitis, R P Stryd, G F Peng, and K T Kirton. Safety Pharmacology and Drug Metabolism Research, The Upjohn Company, Kalamazoo, MI.
- #1500 **LYNGBYATOXIN A-INDUCED CONTRACTIONS OF RABBIT AORTA.** C P Robinson, D R Franz, and M E Bondura. College of Pharmacy, University of Oklahoma, HSC, Oklahoma City, OK and Pathophysiology Division, USAMRIID, Frederick, MD.
- #1501 **THE THROMBOXANE A2 MIMIC U46619 INCREASES CALCIUM TRANSIENTS IN RAT CARDIAC MYOCYTES.** I Heinroth-Hoffman, P Hoffman, M Toraason. Cellular Toxicology, ETB, DBBS, NIOSH, CDC, Cincinnati, OH.

- #1502 **THE UTILITIES OF ELECTROCARDIOGRAM (ECG) AND ARTERIAL PRESSURES (APS) MONITORING IN CONSCIOUS DOGS IN SAFETY EVALUATION OF DRUGS.** K T Kirton, D A Rop, C P Sabaitis, and B K J Leong. Safety Pharmacology Research, The Upjohn Company, Kalamazoo, MI.
- #1503 **CHRONIC (1-YEAR) SAFETY EVALUATION OF IPAZILIDE FUMARATE (IPAZ) ADMINISTERED ORALLY TO RATS.** Y Greener, T A Barbolt, and K Gossett. Drug Safety Assessment, Sterling Research Group, Rensselaer, NY.
- #1504 **TOXICOLOGY AND PHARMACOKINETICS OF ARGATROBAN IN THE DOG FOLLOWING INTRAVENOUS ADMINISTRATION.** D A Thomas, S A Baughman, G C McCormick, J Mordenti, and J D Green. Department of Safety Evaluation, Genentech Inc., S. San Francisco, CA.
- #1505 **INEXPENSIVE MACINTOSH™-BASED ELECTROCARDIOGRAPHY FOR SMALL ANIMALS.** A B Combs and S J Pan. Div. Pharmacol. Toxicol., Coll. of Pharmacy, U. of Texas, Austin, TX.
- #1506 **A COMPARISON OF INDIRECT AND DIRECT BLOOD PRESSURE MONITORING METHODS IN DOGS.** L D Hopper, H G Li, D S Garbooshian and W D Shotwell. Bristol-Myers Squibb Pharmaceutical Research Institute, Syracuse, NY.
- #1507 **THE PRECISION-CUT ADULT HUMAN AND RAT HEART SLICES: A MODEL FOR DOXORUBICIN AND MITOSANTHRONE CARDIOTOXICITY.** A R Parrish, R T Dorr, A J Gandolfi, and K Brendel. Dept. of Pharmacology, University of Arizona, Tucson, AZ.
- #1508 **CARDIOVASCULAR COMPONENTS OF ORGANOPHOSPHORUS ESTER-INDUCED DELAYED NEUROPATHY (OPIDN) IN HENS.** W C McCain, M Ehrlich, J Wilcke and J C Lee. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.
- #1509 **THYROID HORMONE DEFICIENCY ARRESTS DEVELOPMENT OF β -ADRENERGIC RECEPTOR TRANSDUCTION MECHANISMS IN NEONATAL RAT.** J B Pracyk and T A Slotkin. Dept. Pharmacol., Duke Univ. Med. Ctr., Durham, NC. Sponsor: M B Abou-Donia.

**THURSDAY MORNING, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: METABOLITE IDENTIFICATION

Chairperson: Timothy R. Fennell, CIIT, Research Triangle Park, NC

Displayed: 8:30 a.m.—11:30 a.m.
Attended: 10:00 a.m.—11:30 a.m.

- #1510 **SURFACE-ENHANCED RAMAN SPECTROSCOPY IDENTIFICATION OF THE METABOLITE AND METABOLITE-CONJUGATE OF AN ANTHELMINTIC DRUG (TBZ) FROM GOAT URINE.** P E Lu^{1,2}, J Wang², D L Stalling². ¹ManTech Environmental Technology, Inc., Dayton, OH. ²Analytical Bio Chemistry Laboratories, Inc., Columbia, MO. Sponsor: D E Dodd.
- #1511 **THE METABOLISM OF 2-METHYLHEPTANE IN MALE FISCHER 344 RATS.** M P Serve^a, D D Bombick^a, J M Clemens^a, G A McDonald^a, D R Mattie^b, and K O Yu^b. ^aDepartment of Chemistry, Wright State University, Dayton, OH and ^bToxic Hazards Division, Armstrong Laboratory, Wright-Patterson AFB, OH.
- #1512 **CHARACTERIZATION OF *p*-HYDROXYPHENOBARBITAL GLUCURONIDE GENERATED FROM IMMOBILIZED RAT HEPATIC UDP-GLUCURONYLTRANSFERASE.** S D Studenberg¹, K L R Brouwer^{1,2}, D L Price-Raybuck³, and R Spreen³. ¹Curriculum in Toxicology and ²School of Pharmacy, University of North Carolina, Chapel Hill, NC, and ³ICI Pharmaceuticals Group, Wilmington, DE. Sponsor: T S Miya.
- #1513 **QUINONE DERIVED MERCAPTURIC ACID METABOLITES OF BROMOBENZENE.** J Zheng and R P Hanzlik. Department of Medicinal Chemistry, University of Kansas, Lawrence, KS.
- #1514 **A NEW CLASS OF MERCAPTURIC ACIDS FROM BROMOBENZENE.** J Zheng and R P Hanzlik. Dept. of Medicinal Chemistry, University of Kansas, Lawrence, KS.
- #1515 **GUINEA PIG AND RAT HEPATIC MICROSOMAL METABOLISM OF MONOCROTALINE.** S R Dueker, M W Lame, D Morin, D W Wilson, and H J Segall. Dept. of Veterinary Pharmacology and Toxicology, University of California/Davis, Davis, CA.
- #1516 **PEROXIDATIVE METABOLISM AND GENOTOXICITY OF 2,4-DIAMINOTOLUENE.** Y H L Pan and G A Reed. University of Kansas Medical Center, Kansas City, KS.
- #1517 **MECHANISTIC STUDIES ON THE FORMATION OF N-ACETYL-CYSTEINE CONJUGATES OF 1,2-DIBROMO-3-CHLORO-PROPANE.** G L Weber, P G Pearson and S D Nelson. The Upjohn Company, Kalamazoo, MI. ^aDepartment of Medicinal Chemistry, University of Washington, Seattle, WA.
- #1518 **SPECIES AND DOSE EFFECTS ON THE URINARY METABOLITES OF 1,2-METHOXY-¹³C] 2-METHOXYETHANOL USING NMR SPECTROSCOPY.** S C J Sumner, D B Stedman, T R Fennell, and F Welsch. CIIT, Research Triangle Park, NC.
- #1519 **IN VITRO METABOLISM OF TRANS, TRANS-MUCONALDEHYDE, A MICROSOMAL HEMATOTOXIC METABOLITE OF BENZENE.** Z Zhang, R T Rosen^a, E K Fukuda^a, B D Goldstein and G Witz. Joint Graduate Program in Toxicology, Rutgers University/UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ, and ^aCAFT, Rutgers University, Cook College, New Brunswick, NJ.

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- #1520 **METABOLISM STUDY OF BENZENE IN MICE: FOUR-WEEK EXPOSURE BY GAVAGE.** K Yu, G Cason, *J Fisher*, G Jepson, H Wall*, and C Fleming*. Toxicology Division (OL-AL/OETA), Armstrong Laboratory, WPAFB, OH; and ManTech Environmental Technology, Inc., Dayton, OH.
- #1521 **THE METABOLIC FATE OF RADIOIODINATED RECOMBINANT TRANSFORMING GROWTH FACTOR- β 1 (¹²⁵I-rhTGF- β 1) AFTER TOPICAL ADMINISTRATION TO A RAT WOUND MODEL.** T F Zioncheck, L Richardson, S A Chen, *J Mordenti*, and *J D Green*. Department of Safety Evaluation, Genentech Inc., S. San Francisco, CA.
- #1522 **METABOLISM OF OXAZEPAM IN B6C3F1 AND SWISS WEBSTER MICE.** R J Griffin and L T Burka. NIEHS, RTP, NC. Sponsor: *H B Matthews*.
- #1523 **MODIFICATION OF 7,8-BENZOFLAVONE METABOLISM IN HAMSTER LIVER MICROSOMES AND *IN VITRO* DNA-BINDING BY HEPATIC TUMOR INDUCING TREATMENTS.** J Schuler, G Blaich and M Metzler. Dept. of Food Chemistry and Environmental Toxicology, University of Kaiserslautern, Germany. Sponsor: *W Dekant*.

THURSDAY, FEBRUARY 27

12:00 Noon-1:00 p.m.

Convention Center-Ballroom 6C

SOT ISSUES SESSION

Chaired by SOT President Donald J. Reed, Ph.D.

Bring your lunch and participate in an open forum discussion of affairs. Open to all registrants.

THURSDAY AFTERNOON, FEBRUARY 27

1:30 p.m.-4:30 p.m.

CONVENTION CENTER—BALLROOM 6A

SYMPOSIUM: FREE RADICALS IN TOXICOLOGY

Sponsored by the Mechanisms Specialty Section

Chairperson: Steven D. Aust, Utah State University, Logan, UT

Free radicals are highly reactive chemical species (organic or inorganic) that have an unpaired electron. The purpose of this symposium is to examine the role that free radicals may play, either directly or indirectly, in the toxicity of drugs and chemicals. The most versatile technique for the detection of free radicals is electron spin resonance (ESR). While some free radicals are stable enough to be detected by ESR, most are too reactive to be observed directly. Reactive radicals can often be detected by means of spin trapping, a technique in which a diamagnetic organic molecule (spin trap) (T) reacts with a radical (R*) to form a more stable radical or spin adduct (SA*), $T + R^* \rightarrow SA^*$. The structure of the parent radical is then deduced from ESR spectrum of SA*. The application of this technique to the identification of radicals formed during the metabolism of 3-methylindole, to understanding the role of the probucol phenoxyl radical and ascorbic acid in protecting LDL against oxidation and to the *in vivo* identification of free radical metabolites of toxic chemicals and drugs will be described. Finally, the possibility that free radicals may exert their toxic effect indirectly by causing the release of iron from ferritin will be discussed.

- #1524 1:30 **FREE RADICALS IN TOXICOLOGY: INTRODUCTION.** C F Chignell. National Institute of Environmental Health Sciences, Laboratory of Molecular Biophysics, NIH, Research Triangle Park, NC.
- #1525 1:40 **THE METABOLIC BASIS OF 3-METHYLINDOLE-INDUCED PNEUMOTOXICITY.** *T M Bray*. University of Guelph, Guelph, Ontario, Canada.
- #1526 2:10 **SYNERGISTIC INTERACTION BETWEEN THE PROBUCOL PHENOXYL RADICAL AND ASCORBIC ACID IN INHIBITING THE OXIDATION OF LOW DENSITY LIPOPROTEIN.** B Kalyanaraman. Medical College of Wisconsin, Milwaukee, WI.
- #1527 2:40 ***IN VIVO* DETECTION OF FREE RADICAL METABOLITES OF TOXIC CHEMICALS AND DRUGS IN BILE.** R P Mason and M J Burkitt. NIEHS, Laboratory of Molecular Biophysics, Research Triangle Park, NC.
- #1528 3:10 **RELEASE OF IRON FROM FERRITIN BY FREE RADICAL METABOLITES.** *S D Aust*. Utah State University, Logan, UT.
- 3:40 **CONCLUSIONS AND IMPLICATIONS.** C F Chignell. National Institute of Environmental Health Sciences, Laboratory of Molecular Biophysics, NIH, Research Triangle Park, NC.

THURSDAY AFTERNOON, FEBRUARY 27

1:30 p.m.-4:30 p.m.

CONVENTION CENTER—BALLROOM 6C

SYMPOSIUM: FLUORIDE TOXICOLOGY AND RISK ASSESSMENT

Sponsored by the Risk Assessment Specialty Section

Dedicated to the memory of Harold C. Hodge, first President of the Society of Toxicology

Chairpersons: Frank Smith, University of Rochester, Rochester, NY and Arthur Gregory, TECHTO Enterprises, Inc., Sterling, VA

The wide use of fluoride as a water additive makes its risk assessment extremely important. The purpose of this symposium is to define the current state of fluoride risk assessment. There will be four speakers. Each of the four speakers will address a distinctly different aspect of that assessment. First, the results of the mutagenicity and carcinogenicity assays will be presented to address the potential for risk that is indicated by animal experiments. Second, the risk of osteofluorosis associated with fluoride exposure will be considered in light of epidemiologic findings among aluminum smelters. Third, the potential risk of various types of malignancies that could be associated with fluoridation of water will be addressed on the basis of multiple epidemiology studies carried out by the NCI. And lastly, a descriptive review of the steps required in the regulation of fluoride level in drinking water that address both the carcinogenic and noncarcinogenic effects of fluoride will be conducted.

- #1529 **FLUORIDE TOXICOLOGY AND RISK ASSESSMENT: INTRODUCTION.** *A R Gregory.* TECHTO Enterprises, Inc., Sterling, VA.
- #1530 **OCCUPATIONAL EXPOSURE TO FLUORIDE AND RISK OF OSTEOFLUOROSIS IN ALUMINUM SMELTING.** *B D Dinman.* University of Pittsburgh, Graduate School of Public Health, Pittsburgh, PA.
- #1531 **HUMAN EPIDEMIOLOGICAL ASPECTS OF FLUORIDE AND CANCER.** *R N Hoover.* NCI, Bethesda, MD.
- #1532 **RISK ASSESSMENT BASIS FOR DRINKING WATER REGULATIONS FOR FLUORIDE.** *E V Ohanian.* Office of Water, US EPA, Washington, DC.
- #1533 **FLUORIDE: EVALUATION OF AVAILABLE HUMAN AND EXPERIMENTAL DATA FOR POPULATION RISK ESTIMATIONS.** *J E Huff.* National Institute of Environmental Health Sciences, Research Triangle Park, NC.

THURSDAY AFTERNOON, FEBRUARY 27

1:30 p.m.-4:00 p.m.

CONVENTION CENTER—ROOM 607

PLATFORM SESSION: XENOBIOTIC INDUCED CHANGES IN HEMATOPOIETIC/PHAGOCYTIC CELLS

Chairpersons: Jeffrey R. Hincks, Sterling Research, Rensselaer, NY And Vincent Castranova, West Virginia University Medical Center, Morgantown, WV

- #1534 1:30 **BENZENE AND ITS PHENOLIC METABOLITES PRODUCE OXIDATIVE DNA DAMAGE *IN VITRO* AND *IN VIVO*.** *P Kolachana, V V Subrahmanyam, K B Meyer, L Zhang, and M T Smith.* School of Public Health, University of California, Berkeley, CA.
- #1535 1:45 **APPLICATION OF *IN VITRO* COLONY FORMING ASSAYS FOR EVALUATING HEMATOTOXICITY IN RATS, DOGS OR MONKEYS.** *F Yamaguchi, K Furuhashi and S Takayama.* Daiichi Pharmaceutical Co., Ltd., Tokyo, Japan.
- #1536 2:00 **MURINE BONE MARROW CFU-GM HEMATOPOIETIC PROGENITORS ARE SELECTIVELY RESISTANT TO 1,4-BENZO-QUINONE *IN VITRO*.** *R J Colinas and D A Lawrence.* Department of Microbiology and Immunology, Albany Medical College, Albany, NY.
- #1537 2:15 **THE EFFECT OF TIN-PROTOPORPHYRIN ON BRAIN HEME OXYGENASE PROTEIN AND TRANSCRIPTS.** *J A Mark, and M D Maines.* Environmental Health Sciences Center and Dept. of Biophysics, Univ. of Rochester, Rochester, NY.
- #1538 2:30 **TRANSFORMING GROWTH FACTOR β (TGF- β)-INDUCED INHIBITION OF BONE MARROW (BM) STROMAL CELL PRODUCTION OF INTERLEUKIN-7 (IL-7).** *L W Updyke, K S Cocke, and D Wierda.* Toxicology Research Laboratories, Lilly Research Laboratories, A Division of Eli Lilly and Company, Greenfield, IN.
- #1539 2:45 **CHARACTERIZATION OF *IN VITRO* CANINE BONE MARROW STEM CELL ASSAYS USING HUMAN DERIVED GROWTH FACTORS.** *E I Fischer and J R Hincks.* Molecular Toxicology Lab, Toxicology Dept., Sterling Research Group, Rensselaer, NY.
- #1540 3:00 **CHANGES IN FREE INTRACELLULAR CALCIUM AND PRODUCTION OF REACTIVE OXYGEN METABOLITES BY PARTICULATE AND SOLUBLE STIMULI.** *M Tuomala, M-R Hirvonen, K Kurvinen and K Savolainen.* Natl. Publ. Hlth. Inst., Dept. Env. Hyg. Toxicol., Kuopio, Finland.
- #1541 3:15 **CYTOKINE AND PHARMACOLOGICAL REGULATION OF LUNG FIBROBLAST PROLIFERATION.** *R H Reist, J Blackford, K Vrana, V Castranova, and R Dey.* Depts. of Physiology, Anatomy Biochemistry, West Virginia University, Div. Respiratory Disorders Studies, NIOSH, Morgantown, WV.
- #1542 3:30 **EXPOSURE OF OYSTER MACROPHAGES TO PARTICULATE BRASS SUPPRESSES LUMINOL-AUGMENTED CHEMILUMINESCENCE.** *R S Anderson, L M Mora, and S A Thomson*.* Chesapeake Biological Laboratory, University of Maryland System, Solomons, MD; *US Army Chemical Research, Development Center, APG, MD.
- #1543 3:45 **1,3-DINITROBENZENE-INDUCED METHEMOGLOBINEMIA: ROLE OF METABOLISM.** *I Reeve, S F McEuen, and M G Miller.* Dept. of Environmental Toxicology, UC Davis, CA. Sponsor: *A L Craigmill*

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THURSDAY AFTERNOON, FEBRUARY 27

1:30 p.m.—4:30 p.m.

CONVENTION CENTER—ROOM 608

PLATFORM SESSION: RESPONSES OF AQUATIC ANIMALS TO ENVIRONMENTAL TOXICANTS

Chairpersons: Mace G. Barron, E.S.E., Gainesville, FL and Lawrence R. Curtis, Oregon State University, Corvallis, OR

- #1544 1:30 COMPARATIVE DISPOSITION, BIOTRANSFORMATION, AND DETOXICATION OF PENTACHLOROPHENOL (PCP) IN MARINE GASTROPOD AND BIVALVE MOLLUSCS. S L Shofer and R S Tjeerdema. Aquatic Toxicology Program, Institute of Marine Sciences, University of California, Santa Cruz, CA.
- #1545 1:45 INTERACTIVE EFFECTS OF PENTACHLOROPHENOL (PCP) AND WATER TEMPERATURE IN THE RED ABALONE AS MEASURED BY *IN VIVO*³¹P NMR SPECTROSCOPY. R S Tjeerdema¹, R J Kauten², and D G Crosby³. ¹Aquatic Toxicology Program, Institute of Marine Sciences, University of CA, Santa Cruz, CA; ²Department of Food Science and Technology, University of CA, Davis, CA; and ³Department of Environmental Toxicology, University of California, Davis, CA.
- #1546 2:00 EFFECTS OF PENTACHLOROPHENOL ON THE CHEMILUMINESCENT RESPONSE OF PHAGOCYTES FROM TWO ESTUARINE SPECIES. L E Roszell and R S Anderson. Univ. of Maryland Program in Toxicology, Chesapeake Biological Laboratory, Solomons, MD.
- #1547 2:15 INDUCTION OF CADMIUM-METALLOTHIONEIN-I POLY A⁺ mRNA IN THE BLUE CRAB (*CALINECTES SAPIDUS*) FOLLOWING CADMIUM EXPOSURE. D Schlenk and M Brouwer. Duke University Marine Laboratory, Beaufort, NC.
- #1548 2:30 INDUCTION OF METALLOTHIONEIN mRNA BY CADMIUM IN FERAL FISHES. L A E Kaplan, K Van Kleef, K Squibb, S J Garte, and I Wirgin. Institute of Environmental Medicine, New York University Medical Center, New York, NY.
- #1549 2:45 TOXIC POTENCIES OF POLYCHLORINATED DIBENZO-P-DIOXINS, DIBENZOFURANS, AND BIPHENYLS, RELATIVE TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD), DURING RAINBOW TROUT EARLY LIFE STAGE DEVELOPMENT. M K Walker and R E Peterson. Environmental Toxicology Center and School of Pharmacy, Univ. of Wisconsin, Madison, WI.
- #1550 3:00 DIFFERENTIAL EFFECTS OF β -NAPHTHOFLAVONE (BNF) AND ISOSAFROLE (ISF) ON THE *IN VITRO* METABOLISM OF 7,12-DIMETHYLBENZANTHRACENE (DMBA) BY TROUT LIVER MICROSOMES. M C Henderson, X Zhao, C L Miranda and D R Buhler. Dept. of Agric. Chemistry and Marine/Freshwater Biomed. Center, Oregon State University, Corvallis, OR.
- #1551 3:15 BIOACCUMULATION OF CHLORDANE BY CHANNEL CATFISH (*ICTALURUS PUNCTATUS*). D L Murphy and J W Gooch. Program in Toxicology, University of Maryland, Baltimore, MD and Center for Environmental and Estuarine Studies of the University of Maryland System, Solomons, MD. Sponsor: B A Fowler.
- #1552 3:30 GLUTATHIONE-DEPENDENT DETOXIFICATION OF CHLOROTHALONIL IN CHANNEL CATFISH TISSUES. E P Gallagher¹ and R T DiGiulio². ¹Dept. of Environmental Health, Univ. of Washington, Seattle, WA; and ²School of the Environment, Duke University, Durham, NC.
- #1553 3:45 DT DIAPHORASE [NAD(P)H: (QUINONE ACCEPTOR) OXIDOREDUCTASE] AND QUINONE REDOX CYCLING IN CHANNEL CATFISH (*ICTALURUS PUNCTATUS*). B M Hasspieler, and R T DiGiulio. Ecotoxicology Laboratory, School of the Environment, Duke University, Durham, NC.
- #1554 4:00 PHARMACOKINETICS OF PARAOXON IN RAINBOW TROUT. R Abbas, I R Schultz, and W L Hayton. College of Pharmacy, The Ohio State University, Columbus, OH.
- #1555 4:15 *IN VIVO* INHIBITION OF BRAIN AND MUSCLE ACETYLCHOLINESTERASE AND HEPATIC ALIESTERASES FOLLOWING CHLORPYRIFOS, PARATHION, AND METHYL PARATHION EXPOSURE IN MOSQUITOFISH (*GAMBUSIA AFFINIS*). J S Boone, and J E Chambers. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

THURSDAY AFTERNOON, FEBRUARY 27

CONVENTION CENTER—ROOM 605

POSTER DISCUSSION SESSION: GENETIC VARIATIONS IN SUSCEPTIBILITY TO ENVIRONMENTAL AGENTS

Chairpersons: Charlene A. McQueen, Department of Pharmacology And Toxicology, Tucson, AZ And David L. Eaton, University of Washington, Seattle, WA

Displayed: 1:30 p.m.—4:30 p.m.

Discussion: 2:30 p.m.—4:30 p.m.

- #1556 COMPARATIVE INDUCTION OF CYP1A1 GENE EXPRESSION IN RAT H4-II-E AND HUMAN HEPG2 HEPATOMA CELLS BY POLYCYCLIC AROMATIC HYDROCARBONS. W H Houser¹, A Raha², S Jain¹, and E Bresnick². Depts. of Pharm. Tox., West Virginia University, Morgantown, WV¹, and Dartmouth Medical School, Hanover, NH².
- #1557 CLONING AND SEQUENCING cDNA AND GENOMIC SEQUENCES ENCODING SERUM PARAOXONASE. R Humbert, C Hassett, R J Richter, C Wood, D Adler, C Disteche, C J Omiecinski and C E Furlong. Departments of Genetics, Environmental Health, Pathology, Medicine, Division of Medical Genetics and Dana Program in Ecogenetics, University of Washington, Seattle, WA.

- #1558 **SPECIES DEPENDENT DIFFERENCES IN HEPATIC CYTOSOLIC GLUTATHIONE S-TRANSFERASE EXPRESSION FOLLOWING TREATMENT WITH INDUCERS.** T Primiano, S G Kim, and R F Novak. Institute of Chemical Toxicology, Wayne State University, Detroit, MI.
- #1559 **THE EFFECTS OF TESTICULAR GSH LEVELS AND THE ROLE OF GLUTATHIONE TRANSFERASES IN DBCP-INDUCED REPRODUCTIVE TOXICITY.** J Gandy, S K Durham, K L Nevels and J L York. University of Arkansas for Medical Sciences, Little Rock, AR.
- #1560 **PERIPHERAL BLOOD CELL ACTIVITIES OF TYPE B MONOAMINE OXIDASE (MAO-B) AND SUPEROXIDE DISMUTASE (SOD) IN PARKINSON'S DISEASE.** H Checkoway, L G Costa, J S Woods, A Castoldi, and B O Lund. Department of Environmental Health, University of Washington, Seattle, WA.
- #1561 **ABSENCE OF MITOCHONDRIAL DNA ALTERATIONS IN PLATELETS FROM PARKINSONIAN PATIENTS.** M S Sandy, M T Smith*, J W Langston, and D Di Monte. California Parkinson's Foundation, San Jose, CA; *School of Public Health, U.C. Berkeley, Berkeley, CA.
- #1562 **ROLE OF MATERNAL AND FETAL ALCOHOL METABOLIZING GENOTYPES IN FETAL ALCOHOL SYNDROME.** E M Faustman, A P Streissguth, L M Stevenson, G S Omenn, and A Yoshida. Departments of Environmental Health, Medicine and Psychiatry, University of Washington, Seattle, WA and Department of Biochemical Genetics, Beckman Research Inst., City of Hope, Duarte, CA.
- #1563 **TESTICULAR BIOTRANSFORMATION OF METHOXYETHANOL: SPECIES DIFFERENCES AND INDUCIBILITY.** M T Moslen, L Kaphalia, and W Au. Departments of Pathology and Preventive Medicine, Univ. of Texas Medical Branch, Galveston, TX.
- #1564 **BIOTRANSFORMATION OF ANILINE IN RAPID AND SLOW ACETYLATOR STRAINS OF MICE.** C A McQueen and B Johnson. Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #1565 **DNA ADDUCT LEVELS IN ACETYLATOR CONGENIC MICE FED 2-AMINOFLUORENE (2-AF) IN THE DIET.** T J Flammang, L H Couch and C K Wise. University of Arkansas for Medical Sciences, Little Rock, AR and National Center for Toxicological Research, Jefferson, AR.

THURSDAY AFTERNOON, FEBRUARY 27
CONVENTION CENTER—ROOM 609

POSTER DISCUSSION SESSION: MECHANISMS OF NASAL TOXICITY

Chairpersons: John B. Morris, University of Connecticut, Storrs, CT and Wanda M. Haschek-Hock, University of Illinois, Urbana, IL

Displayed: 1:30 p.m.—4:30 p.m.

Discussion: 2:30 p.m.—4:30 p.m.

- #1566 **TOXICOLOGICAL EFFECTS OF INHALATION EXPOSURE TO STYRENE IN RATS AND MICE.** J H Roycroft¹, T J Mast², H A Ragan, S L Grumbein, R A Miller, B J Chou. ¹NIEHS/NTP, RTP, NC. ²Battelle Northwest, Richland, WA. Sponsor: G N Rao. (This abstract will be presented as #1404A on Thursday morning in the Inhalation II Poster Session.)
- #1567 **FORMALDEHYDE (HCHO): FORMATION OF DNA-PROTEIN CROSS-LINKS (DPX) AND INCORPORATION INTO DNA IN SUBCHRONICALLY EXPOSED RATS.** H D Heck, M Casanova, K T Morgan, E G Bermudez, O R Moss, B Asgharian, and R A James. CIIT, RTP, NC.
- #1568 **N-ACETYL CYSTEINE DOES NOT PROTECT AGAINST ACETAMINOPHEN-INDUCED RESPIRATORY TOXICITY IN MICE.** W M Haschek, D W Roberts, A R Warbritton, and E H Jeffery. Department of Veterinary Pathobiology and Institute for Environmental Studies, University of Illinois, Urbana, IL and National Center for Toxicological Research, Jefferson, AR.
- #1569 **ACETAMINOPHEN (AP) INDUCES RESPIRATORY TOXICITY AT MINIMALLY HEPATOTOXIC DOSES IN THE RAT AND IS NOT ABROGATED BY DIMETHYLSULFOXIDE (DMSO).** E H Jeffery and W M Haschek. Inst. for Environmental Studies and Dept. of Veterinary Pathology, Univ. of Illinois, Urbana, IL.
- #1570 **COMPARATIVE ANALYSIS OF ACTIVITY AND DISTRIBUTION OF NASAL CARBOXYLESTERASES (CE).** J L Lewis, K J Nikula, and A R Dahl. Inhalation Toxicology Research Institute, Albuquerque, NM.
- #1571 **NASAL LESION DEVELOPMENT AND REVERSIBILITY IN RATS EXPOSED TO AEROSOLS OF DIBASIC ESTERS.** K P Lee, R Valentine, and M S Bogdanffy. Du Pont Co, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #1572 **HUMAN AND RAT NASAL ALPHA-NAPHTHYL BUTYRATE ESTERASE ACTIVITY: KINETICS AND SUBSTRATE SPECIFICITY.** P M Mattes¹, W B Mattes², J B Morris³. ¹U. of CT, Farmington, CT; ²CIBA-GEIGY, Farmington, CT; and ³U. of CT, Storrs, CT.
- #1573 **OLFACTORY TOXICITY OF IDPN: EFFECTS OF P450 IIE1 INDUCTION AND METYRAPONE INHIBITION.** M B St. Clair, N J Deamer, and N H Adams. Dept. of Toxicology, North Carolina State Univ., Raleigh, NC.
- #1574 **NASAL UPTAKE OF INSPIRED ACETALDEHYDE.** J B Morris, and K T Blanchard. Toxicology Program, University of Connecticut, Storrs, CT.

- #1575 **HISTOPATHOLOGY AND CELL REPLICATION IN THE NASAL EPITHELIUM OF RATS AND MICE EXPOSED TO GLUTAR-ALDEHYDE VAPOR.** *E A Gross*¹, *P Mellick*², *F Kari*³, and *K T Morgan*¹. ¹CIIT, RTP, NC. ²Battelle PNL, Richland, WA and ³NIEHS, RTP, NC.
- #1576 **METABOLISM OF ALDEHYDES AND ESTERS IN HUMAN RESPIRATORY NASAL MUCOSA: A BIOCHEMICAL AND HISTOCHEMICAL STUDY.** *M S Bonnefoi*, *H W Randall*, *R Levine*, *P D Kenan*^{*}, and *K T Morgan*. CIIT, Research Triangle Park, NC and ^{*}Duke University Medical Center, Durham, NC. Sponsor: *S Lerman*.
- #1577 **CELL PROLIFERATION AND GLUTATHIONE LEVELS IN NASAL AIRWAYS OF RATS EXPOSED TO OZONE.** *J R Harkema*, *K R Maples*, and *J A Hotchkiss*. Inhalation Toxicology Research Institute, Albuquerque, NM.

THURSDAY AFTERNOON, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: CYTOCHROME P-450

Chairpersons: James R. Halpert, University of Arizona, College of Pharmacy, Tucson, AZ

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 1:30 p.m.—3:00 p.m.

- #1578 **REGULATION OF P450 ISOZYMES IN MICE BY METHYLENEDIOXYPHENYL COMPOUNDS.** *N H Adams*, *P E Levi*, and *E Hodgson*. North Carolina State University, Raleigh, NC.
- #1579 **AROMATIC HYDROXYLATION OF DITERPENES BY FUNGI.** *R Milanova*, *M Moore*. Department of Biological Sciences, Simon Fraser University, Burnaby, BC, Canada.
- #1580 **INDUCTION OF HEPATIC PEROXISOMAL AND CYTOCHROME P-450 ENZYMES BY A SERIES OF DEHYDROEPIANDROSTERONE-RELATED STEROIDS.** *Z Jayyosi*, *A Groth-Watson* and *M Kelley*. Rhone-Poulenc Rorer Central Research, Horsham, PA. Sponsor: *S Lerman*.
- #1581 **SEX STEROIDS AND INDUCTION OF RAT HEPATIC CYTOCHROME P450 BY INDUCERS IN CLINICAL USE.** *M M R Eldeib*, *M J J Ronis*, *C Mercado*, *D Irby* and *T M Badger*. Dept of Pediatrics, Arkansas Children's Hospital Research Center and UAMS, Little Rock, AR.
- #1582 **PHARMACODYNAMICS OF HEPATIC CYP2B1 INDUCTION BY PHENOBARBITAL AND ETHYLPHENYLOXAZOLIDINEDIONE IN THE MALE F344/NCR RAT.** *R W Nims*, *C R Jones*, *D W Mellini*, *V C Nelson*, *J I Syi*, *L K Keefer* and *R A Lubet*. LCC, National Cancer Institute and BCDP, CSAL and ASCL. PRI/DynCorp Inc., NCI-FCRDC, Frederick, MD.
- #1583 **FORMAMIDES—A NEW CLASS OF SUBSTRATES OF THE CYTOCHROME P450 ISOENZYME CYP2E1.** *R Hyland*, *J Thummel*^{*}, *A W Smith*, and *A Gescher*. Mechanisms of Drug Toxicity Research Group, Pharmaceutical Sciences Institute, Aston University, Birmingham, UK, and ^{*}Department of Pharmaceutics, School of Pharmacy, University of Washington, Seattle, WA. Sponsor: *S D Nelson*.
- #1584 **ROLE OF P450 3A ENZYMES IN THE METABOLISM OF DIGITOXIN BY HUMAN LIVER MICROSOMES.** *D C Eberhart* and *A Parkinson*^{*}. Mobay Corporation, Kansas City, MO and ^{*}University of Kansas Medical Center, Kansas City, KS.
- #1585 **IN VITRO METABOLISM OF PYRROLIZIDINE ALKALOIDS (PA'S) BY HUMAN LIVER MICROSOMES. COMPARISON WITH ANIMAL DATA.** *R L Reed*, *C L Miranda*, and *D R Buhler*. Oregon State University, Corvallis, OR.
- #1586 **SPECIES DIFFERENCES IN LIVER MICROSOMAL COUMARIN 7-HYDROXYLATION.** *R Pearce*, *D Greenway*, and *A Parkinson*. University of Kansas Medical Center, Kansas City, KS.
- #1587 **PROPOSED CYTOCHROME P-450 CATALYZED DEHYDRATION OF INDOLE-3-CARBINOL, A METABOLITE OF 3-METHYLINDOLE.** *M L Appleton*, and *G S Yost*. Dept. of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.
- #1588 **PATTERNS OF PARATHION METABOLISM BY ADULT AND JUVENILE MALE RAT HEPATIC MICROSOMES.** *G D Dorough* and *J E Chambers*. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.
- #1589 **KINETIC PARAMETERS OF DESULFURATION AND DEARYLATION OF PARATHION AND CHLORPYRIFOS BY RAT LIVER MICROSOMES.** *T Ma* and *J E Chambers*. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.
- #1590 **POTENT INHIBITION OF RAT PROSTATE MICROSOMAL ANDROGEN INACTIVATION BY IMIDAZOLE-BUT NOT TRI-AZOLE-ANTIMYCOTIC AGENTS OR INHIBITORS OF STEROID 5 α -REDUCTASE.** *B Gemzik* and *A Parkinson*. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.
- #1591 **DIFFERENTIAL EFFECTS ON CYTOCHROME P450 ISOZYMES IN RAT LUNG AND LIVER AFTER TOLUENE INHALATION.** *G M Furman*, *D M Silverman* and *R A Schatz*. Toxicology Program, Northeastern University, Boston, Massachusetts.
- #1592 **ISOZYME SPECIFIC INHIBITION OF PULMONARY AND HEPATIC CYTOCHROME P-450 BY P-CHLOROTOLUENE (PCT) AND THE EFFECTS ON BENZO(A)PYRENE (BAP) METABOLISM.** *T Zewdie*, *D Silverman*, *R Schatz*. Toxicology Program, Northeastern University, Boston, MA.

- #1593 EFFECTS OF CYCLOSPORIN A ON RENAL AND HEPATIC CYTOCHROME P450. N Sadreih, A Ghosal and P E Thomas. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ. Sponsor: C M Wiltner. #1610
- #1594 13-WEEK TOXICOLOGIC EVALUATION OF THE EFFECTS OF CYTOCHROMES P-450 INHIBITION BY 1-AMINO-BENZOTRIAZOLE IN MALE CRL: CD[®] BR RATS. C L Meschter, L S Kaufman, M Mortillo, W A Garland, and B A Mico. Investigative Toxicology, Department of Toxicology and Pathology, Department of Drug Metabolism, Hoffmann-La Roche Inc., Nutley, NJ. #1611
- #1595 THE EFFECTS OF SOME HEPATIC-P-450 ENZYME INHIBITORS AND INDUCERS ON THE DURATION OF XYLAZINE-KETAMINE ANESTHESIA IN BROILER CHICKS. J D Roder, R Akkaya, C W Qualls, H R Amouzadeh, S Sangiah, and G E Burrows. Oklahoma State University, College of Veterinary Medicine, Stillwater, OK. #1612
- #1596 GRISEOFULVIN-INDUCED PROTOPORPHYRIA. F De Matteis, A H Gibbs, *S R Martin, R Milek. MRC Toxicology Unit, Surrey, UK and *MMR, London, UK. Sponsor: L L Smith. #1613
- #1597 EFFECTS OF THE PEROXISOME PROLIFERATOR PERFLUORODECANOIC ACID (PFDA) ON HEPATIC PEROXISOMAL AND DRUG-METABOLIZING ENZYMES. S M Thampi, B V Cruz, L W Robertson, and H Thomas. Graduate Center for Toxicology, University of Kentucky, Lexington, KY and Ciba-Geigy Ltd., Basle, Switzerland. #1614
- #1598 RELATIONSHIP BETWEEN TISSUE SPECIFIC CYTOCHROME P450 RNAs AND 3-METHYLINDOLE TOXICITY. S Ramananth, J R Thornton-Manning, and G S Yost, Dept. of Pharmacol. and Toxicol., University of Utah, Salt Lake City, UT. #1615
- #1599 ASSESSMENT OF HEPATIC ENZYME INDUCTION BY IPAZILIDE FUMARATE (IPF) IN FRESHLY ISOLATED RAT HEPATOCYTES. M A Ritz, Y Greener and A E Roberts. Biochemical Toxicology, Sterling Research Group, Rensselaer, NY. #1616
- #1600 EFFECTS OF A HOPS EXTRACT ON HEPATIC CYTOCHROME P450 METABOLISM. E B Shipp and W G Helferich. Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI. #1617
- #1601 MODULATION OF HEPATIC AND DUODENAL MICROSOMAL MONOOXYGENASE BY DIETARY LIPID AND ETHANOL IN A MODEL SYSTEM UTILIZING TOTAL ENTERAL NUTRITION (TEN). R Hakkak, M J J Ronis, D Irby, C Mercado, M Eldeib, and T M Badger. Dept. of Pediatrics, UAMS, and Arkansas Children's Hospital Research Center, Little Rock, AR. #1618
- #1602 DIFFERENTIAL EFFECTS OF β -NAPHTHOFLAVONE (BNF) AND 3-METHYLCHOLANTHRENE (3MC) ON HEPATIC MICROSOMAL CYTOCHROME P450 IN JAPANESE QUAIL. S K Hennes and D R Buhler. Toxicology Program, Oregon State University, Corvallis, OR. #1619
- #1603 DIFFERENTIAL EFFECTS OF XENOBIOTICS ON AVIAN HEPATIC CYTOCHROMES P450. H Li and S Bandiera, Faculty of Pharmaceutical Sciences, Univ. of British Columbia, Vancouver, BC, Canada. Sponsor: G D Bellward. #1620
- #1604 AFLATOXIN TOXICITY IN CULTURED EPIDERMAL CELLS: STIMULATION BY TCDD. A A Walsh, D P H Hsieh, W E Whitehead, and R H Rice. Department of Environmental Toxicology, University of California, Davis, CA. #1621
- #1605 CHARACTERIZATION OF THE INDUCTION OF EROD ACTIVITY IN PRIMARY HEPATOCYTES (HPTC) FROM B6C3F1 AND DBA/2 MICE BY DIRECT EXPOSURE TO 2,3,7,8-TCDD. H G Jeong*, K H Yang* and M P Holsapple*. KAIST, Seoul, Korea* and MCV/VCU, Richmond, VA. #1622
- #1606 SERUM MODULATION OF TCDD-INDUCED ETHOXY-RESORUFIN-O-DEETHYLASE (EROD) ACTIVITY IN PRIMARY HEPATOCYTES. *W D Stevens, *D L Morris, *H G Jeong, *Y J Chun and *M P Holsapple. *MCV/VCU, Richmond, VA and *KAIST, Seoul, Korea. #1623
- #1607 INDUCTION OF CYTOCHROME P450 IN ZEBRA FISH CELLS IN CULTURE BY 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD). P Collodi^{1,3}, C L Miranda³, X Zhao², D R Buhler^{2,3}, and D W Barnes^{1,3}. ¹Dept. of Biochem. and Biophysics, ²Dept. of Agriculture Chemistry, Environmental Health Sciences Center, Oregon State Univ., Corvallis, OR. #1624
- #1608 CYTOCHROME P450 INDUCTION AND GENOTOXICITY IN FERAL FISH COLLECTED FROM THE NIAGARA RIVER ECOSYSTEM. N A Eufemia¹, M S Kroen¹, D E Watson¹, T K Collier², J E Stein² and R T DiGiulio¹. ¹School of the Environment, Duke University, Durham, NC; and ²EC Division, NMFS, NOAA, Seattle, WA. #1625
- #1609 DOSE-RESPONSE INDUCTION OF CYP1A1 GENE EXPRESSION BY 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) IN B6C3F1 MOUSE LIVER. T Narasimhan, A Craig, L Arellano, L Safe and S Safe. Dept. Physiol. and Pharmacol., Texas A&M University, College Station, TX. #1626
- #1609-A P450 ISOZYME ACTIVITIES IN WB344 CELLS AS MEASURED BY FLUORESCENT PROBE SUBSTRATES. B L Hancock, and S R Channel. Toxicology Division (OL-AL/OET), Armstrong Laboratory, WPAFB, OH. (See abstract #487 in *The Toxicologist*.) #1627

THURSDAY AFTERNOON, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: GLUTATHIONE

Chairperson: Hartmut Jaeschke, Baylor College of Medicine, Houston, TX

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 3:00 p.m.—4:30 p.m.

- #1610 **A SPECIFIC METHOD FOR DETERMINATION OF GLUTATHIONE.** M Saxena, S S Singhal, and Y C Awasthi. Human Biological Chemistry and Genetics, University of Texas Medical Branch, Galveston, TX.
- #1611 **IDENTIFICATION OF A DISCRETE GLUTATHIONE POOL IN THE NUCLEUS; DISTINCTION FROM THE CYTOSOLIC GLUTATHIONE POOL.** T M Guenther, V Jevtovic-Todorovic, and X L Shen. Dept. of Pharmacology, Univ. of Illinois, College of Medicine, Chicago, IL. Sponsor: B S Levine.
- #1612 **RESPIRATORY INHIBITORS INFLUENCE GLUTATHIONE STATUS DURING THE PERMEABILITY TRANSITION IN MITOCHONDRIA.** M K Savage and D J Reed. Dept. Biochem. and Biophys., Oregon State University, Corvallis, OR.
- #1613 **DEVELOPMENT AND UTILIZATION OF A cDNA PROBE FOR γ -GLUTAMYL CYSTEINE SYNTHETASE TO STUDY TRANSCRIPTIONAL REGULATION OF GLUTATHIONE BIOSYNTHESIS.** K I Borroz and D L Eaton. Environmental Health, University of Washington, Seattle, WA.
- #1614 **GSH REPLENISHMENT IN THE PRESENCE OF BUTHIONINE SULFOXIMINE (BSO) FOLLOWING ACETAMINOPHEN (AA) INITIATED TOXICITY IN ISOLATED HEPATOCYTES.** E Rafeiro and W J Raz. Department of Pharmacology and Toxicology, Queen's University, Kingston, Ontario, Canada. Sponsor: T E Massey.
- #1615 **EFFECTS OF DIETARY FAT AND SELENIUM (Se) ON WEIGHT GAIN, AND LIVER, KIDNEY, COLON GLUTATHIONE (GSH) OF 1,2 DIMETHYLHYDRAZINE DIHYDROCHLORIDE (DMH) TREATED RATS.** V K Nonavinakere, C L Black, S C Curtis, R A Potnis, and J L Early. College of Pharmacy, Florida A&M University, Tallahassee, FL. Sponsor: R C Schnell.
- #1616 **POTENTIAL MECHANISMS OF CHEMOPROTECTION BY RIBCYC, A THIAZOLIDINE PRODRUG OF L-CYSTEINE.** J C Roberts and D J Francetic. Department of Medicinal Chemistry, University of Utah, Salt Lake City, UT. Sponsor: G S Yost.
- #1617 **ELEVATION OF INTRACELLULAR CYSTEINE AND GLUTATHIONE IN RAT LUNG SLICES BY CYSTEINE ISOPROPYL ESTER AND OTHER CYSTEINE DELIVERY SYSTEMS.** G M Cohen, M Butterworth, L L Smith and D G Upshall. Medical Research Toxicology Unit, Surrey, UK and Chemical and Biological Defense Establishment, Wilts, UK.
- #1618 **CYSTEINE ISOPROPYLESTER PROTECTS AGAINST PARACETAMOL- AND BROMOBENZENE-INDUCED TOXICITY.** M Butterworth, D G Upshall, L L Smith and G M Cohen. Medical Research Council Toxicology Unit, Surrey, UK and Chemical and Biological Defense Establishment, Wilts, UK.
- #1619 **ROLE OF GLUTATHIONE IN PROTECTION AGAINST ULTRAVIOLET LIGHT-INDUCED FREE RADICAL PRODUCTION IN EPIDERMAL CELLS.** D E Heck and J D Laskin. Joint Graduate Program in Toxicology, UMDNJ-Robert W. Johnson Medical School, Piscataway, NJ.
- #1620 **GLUTATHIONE MODULATION OF RESPONSE OF PC-3 PROSTATE CANCER CELLS TO MELPHALAN.** A T Canada, L A Herman, C N Robertson, and D L Trump. Integrated Toxicology Program and Depts. of Anesthesiology, Surgery and Medicine, Duke University Medical Center, Durham, NC.
- #1621 **EXOGENOUS GLUTATHIONE MODULATES CADMIUM TOXICITY IN NRK-49F CELLS.** Y J Kang¹ and M D Engr². ¹Department of Pharmacology, UND School of Medicine, Grand Forks, ND; ²Department of Zoology and Genetics, Iowa State University, Ames, IA.
- #1622 **EFFECTS OF CIGARETTE SMOKE (CS) ON THE GLUTATHIONE (GSH) STATUS OF THE UPPER AND LOWER RESPIRATORY TRACTS OF RATS.** K R Maples, J R Harkema, J A Hotchkiss, B T Chen, K J Nikula, and G L Finch. Inhalation Toxicology Research Institute, Albuquerque, NM.
- #1623 **RELATIONSHIPS BETWEEN GLUTATHIONE (GSH) DEPLETION AND PROSTACYCLIN IN THE RAT.** W Bottje, P Maynard, W Graupner, B Eravetchakul. Dept. of Animal and Poultry Sciences, University of Arkansas, Fayetteville, AR. Sponsor: M Ronis.
- #1624 **EXOGENOUS GLUTATHIONE (GSH) DECREASES LYMPHATIC TRANSPORT OF LIPID HYDROPEROXIDES *IN VIVO*.** T Y Aw. Dept. Physiol. LSU Medical Ctr., Shreveport, LA. Sponsor: D P Jones.
- #1625 **LIPOXYGENASE CATALYZED OXIDATION OF GLUTATHIONE AND REDUCED PYRIDINE NUCLEOTIDES.** P Roy and A P Kulkarni. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.
- #1626 **REDUCED LEVELS OF PROLIFERATING CELL NUCLEAR ANTIGEN (PCNA) DETECTED IN GLUTATHIONE-DEPLETED CON A-STIMULATED HUMAN T LYMPHOCYTES.** A C Walsh and D A Lawrence. The Departments of Microbiology/Immunology and Pathology/Laboratory Medicine, Albany Medical College, Albany, NY.
- #1627 **MUCOSAL SECRETION OF CYSTEINE ACROSS THE INTESTINAL BASOLATERAL MEMBRANE IS SENSITIVE TO VASCULAR DISULFIDE STATUS.** L J Dahm and D P Jones. Emory University, Atlanta, GA.
- #1628 **ACTIVITY OF MOUSE LIVER GLUTATHIONE TRANSFERASE (GST) ISOZYMES TOWARDS *trans*, *trans*-MUCONALDEHYDE (MA) AND 4-HYDROXYNONENAL (4HN).** D Goon*, M Saxena*, Y C Awasthi* and D Ross*. *Molecular Toxicology & Environ. Health Sci. Prog., School of Pharmacy, Univ. of Colorado, Boulder, CO; *Dept. of Human Biological Chemistry & Genetics, Univ. of Texas Medical Branch, Galveston, TX.
- #1629 **GLUTATHIONE S-TRANSFERASE ACTIVITY IN A CYCLOPHOSPHAMIDE RESISTANT CELL LINE.** M E Richardson and E W Siemann. Department of Toxicology, University of Rochester, Rochester, NY. Sponsor: V G Laties.

- #1630 **GLUTATHIONE-S-TRANSFERASE ACTIVITY IN THE EARLY HUMAN FETUS.** A Mitra, N S Srinivasan, and A P Kulkarni. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.
- #1631 **INDUCTION OF PLACENTAL GLUTATHIONE S-TRANSFERASE IN RAT HEPATOCYTES BY COPLANAR POLYCHLORINATED BIPHENYL (PCB) CONGENERS.** Y Aoki¹, K Satoh², K Sato³, and K T Suzuki¹. ¹National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan; and ²Hirosaki University School of Medicine, Hirosaki, Aomori, Japan.
- #1632 **THE EFFECTS OF PHENOLIC ANTIOXIDANTS ON EXPRESSION OF GLUTATHIONE S-TRANSFERASE (GST) ISOZYMES IN CULTURED RAT HEPATOCYTES.** A Gruebele, R S Dwivedi, T Primiano and R F Novak. The Institute of Chemical Toxicology, Wayne State University, Detroit, MI.
- #1633 **cDNA CLONING AND mRNA EXPRESSION OF MURINE GLUTATHIONE S-TRANSFERASES AND ANALYSIS OF PURIFIED ALPHA CLASS GST PROTEINS EXPRESSED IN E. COLI.** T M Buetler and D L Eaton. Department of Environmental Health, University of Washington, Seattle, WA.
- #1634 **INHIBITION OF MOUSE GLIOMA CELL PROLIFERATION AND GLUTATHIONE-S-TRANSFERASE BY ASCORBYL ESTERS AND INTERFERON.** A K Naidu, M Wiranowska*, M Acevedo-Duncan*, S H Kori* and A P Kulkarni. Florida Toxicology Research Center, College of Public Health; *Dept of Neurology, College of Medicine, University of South Florida, Tampa, FL.
- #1635 **RAT URINARY AND BILIARY EXCRETION OF GLUTATHIONE CONJUGATES AND MERCAPTURIC ACIDS OF BUTADIENE MONOXIDE.** J E Sharer and A A Elfarra. Dept. of Comp. Biosci. and Envir. Tox. Center, Univ. of Wisconsin, Madison, WI.

**THURSDAY AFTERNOON, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: HEPATIC TOXICITY II

Chairperson: Gregory L. Kedderis, CIIT, Research Triangle Park, NC

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 1:30 p.m.—3:00 p.m.

- #1636 **AGE-DEPENDENT DIFFERENCES IN HEPATOBILIARY FUNCTION IN MALE SPRAGUE-DAWLEY RATS.** C A Fratecelli, R S Goldstein, R S Sozio and J A Handler. Dept. of Investigative Toxicology, SmithKline Beecham Pharmaceuticals, King of Prussia, PA.
- #1637 **OLTIPRAZ-INDUCED PROTECTION OF BROMOBENZENE HEPATOTOXICITY IN RATS.** C Yuan, T Ary, R C Schnell. Dept. Pharmaceutical Sci., College of Pharmacy, N. Dak. State Univ., Fargo, ND.
- #1638 **EFFECT OF OLEANOLIC ACID AND α -HEDERIN ON HEPATIC ACTIVATING AND DETOXYFYING SYSTEMS IN MICE.** J Liu, Y P Liu, A Parkinson and C D Klaassen. University of Kansas Medical Center, Kansas City, KS.
- #1639 **MULTIPLICITY OF FLAVIN-CONTAINING MONOOXYGENASE(S) EXPRESSED IN MOUSE TISSUES.** K Venkatesh, P E Levi, and E Hodgson. Department of Toxicology, North Carolina State University, Raleigh, NC.
- #1640 **PHENOBARBITAL-INDUCTION ENHANCES THE METABOLISM AND HEPATOTOXICITY OF DIETHYLDITHIOCARBAMATE METHYL ESTER (DDTC-Me), A METABOLITE OF DIETHYLDITHIOCARBAMATE (DDTC).** A Madan and M D Faiman. Department of Pharmacology and Toxicology, The University of Kansas, Lawrence, KS.
- #1641 **MODULATION OF METHYLENE DIANILINE TOXICITY BY HYPERTHYROIDISM AND PHENOBARBITAL PRETREATMENT.** M F Kanz, G H Gunasena, and M T Moslen. Department of Pathology, University of Texas Medical Branch, Galveston, TX.
- #1642 **RELATIONSHIP BETWEEN INDUCTION OF HEPATIC UDP-GLUCURONYLTRANSFERASES BY ENZYME INDUCERS AND LEVELS OF THYROID HORMONES IN RATS.** H Kaneko, K Saito, I Nakatsuka and H Yamada. Environ. Health Sci. Lab., Sumitomo Chemical Co., Ltd., Konohana-Ku, Osaka, Japan.
- #1643 **HEPATIC PURINE NUCLEOSIDE PHOSPHORYLASE (PNP), XANTHINE OXIDASE (XO) AND GLUTATHIONE REDUCTASE (GSSG-R) ACTIVITIES IN RATS AND DOGS AFTER CHRONIC DIDANOSINE TREATMENT.** M H Davies, L D Hopper, R A Buroker, C L Bregman, E F Christensen, J K Klimczak and O P Flint. Bristol-Myers Squibb Pharmaceutical Research Institute, Syracuse, NY.
- #1644 **SUCCINATE ESTERS OF TOCOPHEROL AND CHOLYESTEROL PREVENT TACRINE-MEDIATED HEPATOTOXICITY.** M W Fariss, H R Lippman, D A Scavullo, J D Smith. Environmental and Molecular Toxicology, Department of Pathology, Medical College of Virginia/Virginia Commonwealth University, Richmond, VA.
- #1645 **THE INHIBITION OF RAT HEPATIC GLUTATHIONE S-TRANSFERASE BY TRIMETHYLTIN IN VITRO AND IN VIVO.** J C Lipscomb^{1,2} and J E A Leakey¹. ¹National Center For Toxicological Research, Jefferson AR, and ²Toxicology Division, Armstrong Lab, WPAFB, OH. Sponsor: J N McDougal.
- #1646 **THE DIFFERENTIAL DEPLETION OF GLUTATHIONE BY 1,2-DICHLOROBENZENE IN FISCHER 344 AND SPRAGUE-DAWLEY RATS.** L Gunawardhana, D C Liebler, T Ziegler and I G Sipes. Dept. of Pharmacology and Toxicology, Univ. of Arizona, Tucson, AZ.

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- #1647 **PERFLUOROCARBOXYLIC ACID INTOXICATION INCREASES β -OXIDATIVE ENZYME CONTENT OF HEPATIC MITOCHONDRIAL FRACTIONS IN RODENTS.** F A Witzman and D N Parker. University at Columbus, IN and B M Jarman, Armstrong Laboratory, Wright-Patterson AFB, OH. Sponsor: *J McDougal*.
- #1648 **PARADOXICAL EFFECTS OF THE PHOSPHODIESTERASE INHIBITOR ENOXIMONE ON HEPATIC PALMITATE OXIDATION.** ¹M Badr, ²S Abdel-Aleem, ³C Frangakis and ¹J Youssef. ¹University of Missouri-Kansas City, Kansas City, MO and ²Glaxo, Inc., Research Triangle Park, NC.
- #1649 **TIME-COURSE OF UROPORPHYRINOGEN DECARBOXYLASE (UROD) INHIBITION IN HEXACHLOROBENZENE (HCB)-TREATED FEMALE RATS.** E Mylchreest and M Charbonneau. Dept hygiene du milieu, Universite de Montreal, Quebec, Canada.
- #1650 **SUBCHRONIC EVALUATION OF AN ACYL-CoA: CHOLESTEROL ACYLTRANSFERASE INHIBITOR IN RODENTS, DOGS AND MONKEYS.** E J McGuire, J R Herman, N Gragtmans, L Lillie, and R Walker. Pathology and Experimental Toxicology, Parke-Davis Pharmaceutical Research, Ann Arbor, MI, and Mississauga, Ontario, Canada.
- #1651 **SOLUBILIZATION AND STRUCTURE-ACTIVITY RELATIONSHIPS FOR SUBSTRATES AND INHIBITORS OF MAMMALIAN LIVER MICROSOMAL CARBOXYLESTERASES.** T L Huang, T Uematsu, Q X Li, B Borhan and B D Hammock. Depts. of Entomology and Environmental Toxicology, Univ. of California, Davis, CA.
- #1652 **HEPATIC GLUTATHIONE (GSH) REGULATION IN YOUNG AND OLD C57BL MICE.** L E Rikans, K Kitani, M Nokubo, and S Kanai. Univ. Oklahoma Hlth. Sci. Ctr., Oklahoma City, OK and Tokyo Metropolitan Inst. Gerontol., Tokyo, Japan.
- #1653 **MECHANISMS OF ZINC (Zn) AND SELENIUM (Se) PROTECTION AGAINST ACETAMINOPHEN (AA)-INDUCED HEPATOTOXICITY IN HAMSTERS.** C Madhu, L Liu, H Kim, A Parkinson and C D Klaassen. University of Kansas Medical Center, Kansas City, KS.
- #1654 **COMPARATIVE HEPATOTOXICITY OF ACETAMINOPHEN (4-HAA) AND ITS "NONHEPATOTOXIC" REGIONISOMER 3-HYDROXYACETANILIDE (3-HAA) IN VIVO AND IN VITRO.** R Esterline, M Allen, R Wells, and M Kelley. Pharm. Res. Rorer Central Research, Horsham, PA. Sponsor: *S Lerman*.
- #1655 **MODULATION OF BILE ACIDS INDUCED BY PARAQUAT (PQ).** M Afzal, M Ali, and MSI Dhami. Dept. of Biochemistry, Kuwait University, Kuwait; and Dept. of Chemistry, San Jose State University, San Jose, CA. Sponsor: *A M Fan*.
- #1656 **ONE MONTH INTRAVENOUS TOXICITY STUDY OF TIN MESOPORPHYRIN IN RATS.** C Yang, S Tekeli, M Friedman, R Krasula, P Cusick and R Patterson. Drug Safety Evaluation Division, Abbott Laboratories, Abbott, IL.
- #1657 **SPECIFIC BINDING OF A PEROXISOME PROLIFERATOR AND LEUKOTRIENE D₄ ANTAGONIST TO RAT LIVER SUBCELLULAR FRACTIONS.** M J Graziano, B E Bigler, P C Baker, and C C Huang. Parke-Davis Pharm. Res. Div., Warner Lambert Co., Ann Arbor, MI.

**THURSDAY AFTERNOON, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: HALOGENATED HYDROCARBONS

Chairperson: Richard J. Bull, Washington State University, Pullman, WA

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 3:00 p.m.—4:30 p.m.

- #1658 **SUBSTRATE SPECIFICITY OF RAT LIVER ALDEHYDE DEHYDROGENASE WITH CHLOROACETALDEHYDE.** A L Sharpe and D E Carter. Univ. of Arizona, Tucson, AZ.
- #1659 **INDUCTION OF NUCLEAR ANOMALIES (NA) BY TRICHLOROACETONITRILE (TCAN) IN FISCHER 344 RATS AND B6C3F1 MICE.** E L C Lin, T V Reddy, F B Daniel and G R Olson. US EPA, Cincinnati, OH.
- #1660 **CELL CYCLE AND GROWTH EFFECTS OF TRICHLOROACETIC ACID IN WB344 CELLS.** S R Channel and E J Hancock. Toxicology Division (OL-AL/OET), Armstrong Laboratory, WPAFB, OH.
- #1661 **DIFFERENCES IN THE METABOLISM OF TRICHLOROETHYLENE IN MICE, RATS, AND DOGS.** M V Templin, J K Stevens, and R J Bull. Pharmacology/Toxicology Program, College of Pharmacy, Washington State University, Pullman, WA.
- #1662 **CYTOCHROME P-450 AS A MECHANISM IN GENDER SPECIFIC POTENTIATION OF CHLOROFORM HEPATOTOXICITY BY DICHLOROACETIC ACID.** H M Yang and M E Davis. Department of Pharmacology and Toxicology, West Virginia University, Morgantown, WV.
- #1663 **IN VIVO METABOLIC AND GASTROINTESTINAL (GI) ABSORPTION RATES OF CHLOROFORM (CHCl₃) IN THE FEMALE F344 RAT.** W B Burnett, M L Gargas, J E Murphy, and M E Andersen. CIIT, RTP, NC.
- #1664 **IN VITRO HEPATIC MICROSOMAL LIPID AND PROTEIN BINDING BY METABOLICALLY ACTIVATED BROMOCHLOROMETHANE.** P Gao and R A Pegram. HERL/USEPA, RTP, NC.

- #1665 **ACUTE RENAL AND HEPATIC TOXICITY OF BROMODICHLOROMETHANE (BDCM) IN F344 RATS FOLLOWING ORAL ADMINISTRATION IN DIFFERENT VEHICLES.** P D Lilly^{1,2}, J E Simmons² and R A Pegram². ¹HERL/USEPA, RTP, NC and ²UNC-CH/ESE, Chapel Hill, NC.
- #1666 **ETHANE EXHALATION AS AN INDEX OF LIPID PEROXIDATION IN RATS INJECTED WITH DICHLOROETHYLENE.** J B Ulreich, M L Eckerson, R D Langford, C D Eskelson, S J Goldberg* and B V Dawson¹, Depts. of Surgery, Pediatrics* and Int. Med.¹, Univ. of Arizona, Tucson, AZ. Sponsor: K Brendel.
- #1667 **METABOLISM OF CHLORINATED HYDROCARBONS IN ISOLATED RAT HEPATOCYTES: SPIN TRAPPING OF FREE RADICAL INTERMEDIATES AND CELL TOXICITY.** L A Reinke¹, S M Bailey¹, J M Rau², and P B McCay². ¹Dept. of Pharmacology, Univ. of Oklahoma Health Sciences, ²Molecular Toxicology, Oklahoma Medical Research Foundation, Oklahoma City, OK.
- #1668 **COVALENT BINDING OF CARBON TETRACHLORIDE AND CHLOROFORM IN THE LIVER AND KIDNEY MODIFIED BY VARIOUS KETONES.** P Raymond and G L Plaa. Dép. de Pharmacol., U. de Montréal, Montréal, Canada.
- #1669 **POTENTIATION OF CCl₄-INDUCED HEPATOTOXICITY AND PNEUMOTOXICITY BY PYRIDINE.** B J Day, D B DeNicola and G P Carlson. Dept. Pharmacol. and Toxicol., Sch. of Pharmacy and Dept. Veterinary Pathobiology, Sch. of Vet. Med., Purdue Univ, West Lafayette, IN.
- #1670 **UTILIZATION OF GLUTATHIONE IN 1,2-DIHALOETHANE METABOLISM BY ISOLATED HEPATOCYTES.** P A Jean and D J Reed. Dept. of Biochem. & Biophys., Oregon State Univ., Corvallis, OR.
- #1671 **MOLECULAR MECHANISMS OF DIBROMOALKANE TOXICITY IN ISOLATED HEPATOCYTES.** C Sood, S Khan, and P J O'Brien. Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada. Sponsor: P G Wells.
- #1672 **STRUCTURE-ACTIVITY RELATIONSHIPS OF TWO AND THREE CARBON HALOGENATED HYDROCARBONS.** S R Skaggs. New Mexico Engineering Research Institute, University of New Mexico, Albuquerque, NM. Sponsor: G B Corcoran.
- #1673 **CORRELATION OF TISSUE DISTRIBUTION AND HEPATOTOXICITY OF CARBON TETRACHLORIDE (CCl₄) FOLLOWING INGESTION.** U Y Sanzgiri, S Muralidhara, and J V Bruckner. Department of Pharmacology and Toxicology, College of Pharmacy, University of Georgia, Athens, GA.
- #1674 **SPECIES-DEPENDENT DISPOSITION AND TOXICITY OF ETHYL CHLORIDE IN FEMALE MICE AND RATS.** L H Pottenger, J L Nieusma, and J S Bus. Toxicology Research Laboratory, Dow Chemical Co., Midland, MI.
- #1675 **IMPROVEMENT OF EXTRACTION EFFICIENCY IN ANALYSIS OF VOLATILE ORGANIC COMPOUNDS (VOCs) IN TISSUES.** S Muralidhara, V Srivatsan, U Sanzgiri, C E Dallas, and J V Bruckner. Dept. Phar./Tox., College of Pharmacy, Univ. of Georgia, Athens, GA.
- #1676 **COMPARATIVE DEVELOPMENTAL TOXICITY OF POLYCHLORINATED BIPHENYL(PCB) CONGENERS IN A FISH EMBRYO-LARVAL ASSAY.** E M Silberhorn, W J Birge, D J Price, and L W Robertson. Graduate Center for Toxicology, University of Kentucky, Lexington, KY.
- #1677 **SUBCHRONIC TOXICITY OF PCB #126 IN THE RAT.** D C Villeneuve¹, I Chu¹, P LeCavalier¹, A Yagminas¹, M Feely¹, R F Seegal² and S Kennedy³. ¹Health Protection Branch, ²State of New York Department of Health, Albany, NY and ³Environment Canada, Tunney's Pasture, Ottawa, Canada.
- #1678 **HEXACHLORO BENZENE (HCB) METABOLITES IN URINE: MAN AND RODENTS COMPARED.** J To-Figueras, J Gomez-Catalan, M Rodamilans and J Corbella. Toxicology Unit, Hospital Clinic Provincial, University of Barcelona, Spain. Sponsor: J R P Cabral.
- #1679 **IMMUNOSUPPRESSIVE AND CYP1A1 INDUCTION ACTIVITIES OF HIGHER CHLORINATED DIPHENYL ETHER CONGENERS IN C57BL/6 MICE.** L Howie, R Dickerson, L Arellano, A Craig, C Rowlands and S Safe. Dept. Physiol. and Pharmacol., Texas A&M University, College Station, TX.
- #1680 **ABSORPTION, METABOLISM, AND EXCRETION OF 2,2',5-TCB AFTER TOPICAL ADMINISTRATION TO HOUSE FLIES.** S A Saghir and L G Hansen. Coll. of Vet. Med., Univ of Illinois, Urbana, IL.
- #1681 **ORAL BIOAVAILABILITY OF SOIL-ASSOCIATED ALDRIN/DIELDRIN.** J E Kester, M I Banton, M L Stoltz. MKES, Denver, CO, Shell Oil Co, Houston, TX, and MRI, Kansas City, MO. Sponsor: D E Stevenson.
- #1682 **METABOLISM OF HCFC-123 AND OTHER HCFC'S.** W T Brashear, M M Ketcha, D L Pollard, R E Wolfe, E R Kinkead. ManTech Environmental Technology, Inc., Dayton, OH.

**THURSDAY AFTERNOON, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL**

POSTER SESSION: RENAL TOXICOLOGY

Chairperson: Gary O. Rankin, Marshall University School of Medicine, Huntington, WV

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 1:30 p.m.—3:00 p.m.

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- #1683 **HAZARD EVALUATION ISSUES ASSOCIATED WITH CHLOROALKENE-INDUCED RENAL CARCINOGENESIS IN MALE RATS.** J C Parker, M J Olson, and C H Ris. Office of Health and Environmental Assess., US EPA, Washington, DC.
- #1684 **ACUTE TOXICITY OF 2-HALOANILINES IN FISCHER 344 (F344) RATS.** M A Valentovic, J G Ball, D Anestis and G O Rankin. Department of Pharmacology, Marshall University School of Medicine, Huntington, WV.
- #1685 **EFFECT OF MICROSOMAL ENZYME ACTIVITY MODULATION ON N-(3,5-DICHLOROPHENYL)-2-HYDROXYSUCCINIMIDE (NDHS) INDUCED NEPHROTOXICITY.** K W Beers, D W Nicoll, V J Teets, and G O Rankin. Department of Pharmacology, Marshall University, School of Medicine, Huntington, WV.
- #1686 **FURTHER CHARACTERIZATION OF THE CYSTEINE CONJUGATE S-OXIDASE ACTIVITY IN RAT HEPATIC AND RENAL MICROSOMES.** P J Sausen, and A A Elfarra. Dept. Comp. Biosci. and Envir. Tox. Center, Univ. of Wisconsin, Madison, WI.
- #1687 **ROLE OF PARA-HYDROXYLATION IN PHENSUXIMIDE-INDUCED UROTOXICITY.** G O Rankin, K W Beers, D W Nicoll, D Anestis, J L Hubbard and P I Brown. Departments of Pharmacology and Anatomy, Marshall University School of Medicine, Huntington, WV.
- #1688 **SEX AND STRAIN RELATED DIFFERENCES IN THE NEPHROTOXICITY OF HYDROQUINONE IN RATS.** R J Boatman, J C English, L G Perry and V E Bialecki. Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY. Sponsor: J O'Donoghue.
- #1689 **ACUTE EFFECTS OF BROMOETHYLAMINE (BEA), IBUPROFEN (I) AND CAFFEINE (C) ON URINARY ELECTROLYTES AND RENAL PROSTAGLANDIN (PG) SYNTHESIS.** J A Young and L D Lehman-McKeeman. Miami Valley Laboratories, Procter & Gamble Co., Cincinnati, OH.
- #1690 **THE COMPARISON OF LYSOSOMAL ALTERATIONS IN F344 AND NBR MALE RATS FOLLOWING GAVAGE EXPOSURE TO DECALIN AND JP-8.** T E Eurell¹ and D R Mattie². ¹Department of Veterinary Biosciences, University of Illinois, Urbana, IL and ²Toxicology Division (OL-AL/OETA), Armstrong Lab, WPAFB, OH.
- #1691 **INHIBITION OF GENTAMICIN (GM) NEPHROTOXICITY BY METHIMAZOLE (METH).** A A Elfarra, P J Sausen, R J Duescher, T M O'Hara, and A J Cooley. Depts. of Comp. Biosci. and Pathobio. Sci. and Envir. Tox. Center, Univ. of Wisconsin, Madison, WI.
- #1692 **EPIDERMAL GROWTH FACTOR (EGF) ACCELERATES RENAL RECOVERY FOLLOWING BROMOHYDROQUINONE (BHQ)- INDUCED NEPHROTOXICITY.** S E Kays, T J Monks, S S Lau, and R G Schnellmann. University of Georgia, Athens, GA and University of Texas, Austin, TX.
- #1693 **AMELIORATION OF HPMP-INDUCED NEPHROTOXICITY IN THE NEW ZEALAND WHITE RABBIT.** T J Davidson, M H Davies, W A Kelly. Bristol-Meyers Squibb Pharmaceutical Research Institute, Syracuse, NY.
- #1694 **THE EFFICACY OF PROBENECID AS A THERAPEUTIC AGENT IN THE MANAGEMENT OF ETHYLENE GLYCOL INTOXICATION.** W Flory and C B Spainhour, Jr. Texas Veterinary Medical Diagnostic Laboratory and Dept. of Veterinary Anatomy Public Health, College of Veterinary Medicine, Texas A&M University, College Station, TX.
- #1695 **STUDIES OF 4-AMINOPHENOL NEPHROTOXICITY.** E A Lock, L M Fowler and J R Foster. ICI Plc, Central Toxicology Laboratory, Alderley Park, Cheshire, UK.
- #1696 **AGE-DEPENDENT ACETAMINOPHEN NEPHRO- AND HEPATOTOXICITY IN MALE AND FEMALE SPRAGUE-DAWLEY RATS.** J B Tarloff¹ and R S Goldstein². ¹Dept. Pharmacology and Toxicology, Philadelphia College of Pharmacy and Science, Philadelphia, PA, and ²Dept. Investigative Toxicology, SmithKline Beecham Pharmaceuticals, King of Prussia, PA.
- #1697 **AN APPROACH TO THE EVALUATION OF DRUG-INDUCED CRYSTALLURIA AND NEPHROPATHY.** R J Fabian, T A Barbolt, V J Sansone, and Y Greener. Drug Safety Assessment, Sterling Research Group, Rensselaer, NY.
- #1698 **COMPARATIVE NEPHROTOXICITY OF CI-973, CISPLATIN AND CARBOPLATIN IN MALE WISTAR RATS.** G H I Wolfgang, M A Dominick and D G Pegg. Parke-Davis Pharm. Res. Div., Warner-Lambert Co., Ann Arbor, MI.
- #1699 **RADIOCONTRAST AGENT INDUCED NEPHROTOXICITY IN THE GALACTOSE FED RAT MODEL.** D L Kaplan, P G Zager, D Eshima, P L Mann, and M A Smith. Univ. of New Mexico, Albuquerque, NM and Univ. of Texas, Houston, TX. Sponsor: S W Burchiel.
- #1700 **SPECIES DIFFERENCES IN THE NEPHROTOXIC RESPONSE TO S-(1,2-DICHLOROVINYL) GLUTATHIONE.** S Chakrabarti, M A Malick, C Denniel and E Greselin. Département de médecine du travail et hygiène du milieu, Université de Montréal, Montréal, Canada.
- #1701 **EVALUATION OF GAMMA-GLUTAMYL TRANSPEPTIDASE INHIBITION IN RATS DOSED WITH AT-125.** M D Gelin and J Killeen, Jr. Ricera, Inc., Toxicology and Animal Metabolism, Painesville, OH.
- #1702 **URINARY N-ACETYL-β-D-GLUCOSAMINIDASE (NAG) AS AN INDICATOR OF NEPHROTOXICITY IN RABBITS.** S J Hermansky, D A Neptun, R C Myers and B Ballantyne. Bushy Run Research Center/Union Carbide Chemicals and Plastics Company Inc., Export, PA.
- #1703 **EFFECT OF STORAGE CONDITIONS ON URINARY INDICATORS OF NEPHROTOXICITY.** Y M Sey¹, M Z Lilly², A McDaniel³, D E House³, J E Simmons³. METI¹, UNC/ESE/CEMLB², HERLUS EPA, RTP, NC.³

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#1704

A COMPARISON OF ¹H NMR SPECTROSCOPY AND CONVENTIONAL BIOANALYSIS OF URINE IN THE DETECTION OF CEPHALOSPORIN-INDUCED RENAL DAMAGE IN THE RABBIT. F W Bonner, S Halligan, S Byard, N Astley, A J Spencer, T J B Gray and E S Harpur. Sterling Research Group, Alnwick, UK.

THURSDAY AFTERNOON, FEBRUARY 27
CONVENTION CENTER—EXHIBIT HALL

POSTER SESSION: REPRODUCTIVE TOXICOLOGY II

Chairpersons: Narsingh Agnish, Hoffmann-La Roche, Nutley, NJ and Jerrold J. Heindel, NIEHS, Research Triangle Park, NC

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 3:00 p.m.—4:30 p.m.

- #1705 THE EFFECT ON EARLY EMBRYONIC DEVELOPMENT FOLLOWING RADIATION EXPOSURE TO MOUSE OOCYTES AS ASSESSED OVER TIME BY THE CHIMERA ASSAY. *D Oudiz*¹, T Straume², K Walsh, L Wiley. ¹Calif. Dept. Toxic Substances Control, Sacramento, CA, ²Lawrence Livermore Natl Lab., Livermore, CA, and Dept. Ob/Gyn, Univ. of Calif, Davis, CA.
- #1706 THE USE OF WHOLE-OVARY CULTURE TO DETECT ALTERED STEROIDOGENESIS FROM EXPOSURE TO CHEMICALS. E Berman, J M Ferrell, H B Carter, and J W Laskey. US EPA, Research Triangle Park, NC. Sponsor: *L E Gray, Jr.*
- #1707 BIOCHEMICAL TOXICITY OF PHYTOESTROGENS IN UTERI OF NEONATAL RATS. K L Medlock and D M Sheehan. Division of Reproductive and Development Toxicology, National Center for Toxicological Research, Jefferson, AR.
- #1708 2-METHOXYETHANOL EFFECTS ON RAT UTERINE CELL AND TISSUE FUNCTION. *M S Pahl* and *R Loch-Carusio*. Toxicology Prog., Dept. Environmental and Industrial Health, University of Michigan, Ann Arbor, MI.
- #1709 METHOXYCHLOR ADMINISTRATION DURING EARLY PREGNANCY ALTERS OVARIAN STEROIDOGENESIS. A M Cummings and J W Laskey. Reprod. Toxicol. Br., US EPA, Research Triangle Park, NC. Sponsor: *L E Gray, Jr.*
- #1710 LONG TERM OVARIAN TOXICITY OF 4-VINYLCYCLOHEXENE IN MICE. D A Douds, S B Hooser, P B Hoyer*, and I G Sipes. Depts. of Pharm/Tox. and Physiology*, Univ of Arizona, Tucson, AZ.
- #1711 EXPRESSION OF HEAT SHOCK PROTEIN (HSP) mRNA IN SERTOLI CELL CULTURES EXPOSED TO CADMIUM. L I Batarsch, M J Welsh and M J Brabec. Eastern Michigan University, Ypsilanti, MI.
- #1712 TESTICULAR SPERMATID HEAD COUNT (SHC) COMPARED TO OTHER INDICES OF REPRODUCTIVE TOXICITY: AN INTERIM REPORT. *R E Chapin*¹, S R Russell, T A Cocanougher, and D K Gulati. ¹NTP/NIEHS, Research Triangle Park, NC; and EHRT, Lexington, KY.
- #1713 CORRELATION OF EJACULATED SPERM NUMBERS WITH FERTILITY IN THE RAT. *L E Gray Jr.*, R Marshall, J Ostby and R W Setzer¹. US EPA, HERL, DTD and RSD¹, Research Triangle Park, NC.
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- #1718 URINARY CREATINE AS A MARKER FOR TESTICULAR DAMAGE. *K E Tomaszewski*¹, K N Nahas, J L Le Net, J P Provost and A Lodola. Laboratories Pfizer, Amboise, France and Pfizer Central Research, UK¹.
- #1719 TESTICULAR TOXICITY OF VINYLCHYCLOHEXENE DIEPOXIDE COMPARED TO 4-VINYLCYCLOHEXENE IN MICE. S B Hooser, D G DeMerell, D A Douds, P B Hoyer*, and I G Sipes. Depts. of Pharm/Tox and Physiology*, Univ of Arizona, Tucson, AZ.
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East Hanover, New Jersey

Schering Corporation
Bloomfield, New Jersey

Searle
Skokie, Illinois

Shionogi and Co., Ltd.
Osaka, Japan

SmithKline Beecham Pharmaceuticals
King of Prussia, Pennsylvania

Sterling-Winthrop Research Institute
Rensselaer, New York

Syntex Research
Palo Alto, California

Union Carbide Corporation
Danbury, Connecticut

UNOCAL Corporation
Los Angeles, California

The Upjohn Company
Kalamazoo, Michigan

Warner Lambert Company
(Parke-Davis Pharmaceutical Resea
Ann Arbor, Michigan

Wyeth-Ayerst Research
Radnor, Pennsylvania

AWARDS

Achievement

1967	Gabriel L. Plaa
1968	Allan H. Conney
1969	Samuel S. Epstein
1970	Sheldon D. Murphy
1971	Yves Alarie
1972	Robert L. Dixon
1973	No Award
1974	Morris F. Cranmer
1975	Ian C. Munro
1976	Curtis D. Klaassen
1977	James E. Gibson
1978	Raymond D. Harbison
1979	Michael R. Boyd
1980	Philip G. Watanabe
1981	No Award
1982	Frederick P. Guengerich
1983	No Award
1984	Melvin E. Andersen
1985	Alan R. Buckpitt
1986	Sam Kacew
1987	James S. Bus
1988	Jeanne M. Manson
1989	James P. Kehrer
1990	Michael P. Waalkes
1991	Debra Lynn Laskin

Arnold J. Lehman

1980	Allan H. Conney
1981	Gabriel L. Plaa
1982	Gary M. Williams
1983	David P. Rall
1984	Tibor Balasz
1985	Frederick Coulston
1986	Gerrit Johannes Van Esch
1987	John P. Frawley
1988	Kundan S. Khera
1989	Richard H. Adamson
1990	Harold C. Grice
1991	Bernard A. Schwetz

Merit

1966	Henry F. Smyth, Jr.
1967	Arnold J. Lehman
1968	R.T. Williams
1969	Harold C. Hodge
1970	Don D. Irish
1971	Kenneth P. DuBois
1972	O. Garth Fitzhugh
1973	Herbert E. Stokinger
1974	William B. Deichmann
1975	Frederick Coulston
1976	Verald K. Rowe
1977	Harry W. Hays
1978	Julius M. Coon
1979	David W. Fassett
1980	Bernard L. Oser
1981	John H. Weisburger
1982	Harold M. Peck
1983	Perry J. Gehring
1984	Tom S. Miya
1985	Carrol S. Weill
1986	Ted A. Loomis

1987	Bo Holmstedt
1988	Seymour L. Friess
1989	Wayland J. Hayes, Jr.
1990	Sheldon D. Murphy
1991	Toshio Narahashi

Education

1975	Harold C. Hodge
1976	Ted A. Loomis
1977	Robert B. Forney
1978	No Award
1979	Sheldon D. Murphy
1980	Herbert H. Cornish
1981	Frederick Sperling
1982	Lloyd W. Hazleton
1983	Julius M. Coon
1984	Frank Guthrie, Ernest Hodgson
1985	William B. Buck
1986	Robert I. Krieger
1987	Gabriel L. Plaa
1988	John Autian
1989	Tom S. Miya
1990	Charles H. Hine
1991	Hanspeter R. Witschi

Frank R. Blood

1974	Yves Alarie
1975	Donald J. Ecobichon, G.J. Johnstone, O. Hutzinger
1976	Richard D. Brown
1977	J. Dedinas, George D. DiVincenzo, C.J. Kaplan
1978	Perry J. Gehring, E.O. Madrid, G.R. McGowan, Philip G. Watanabe
1979	R. Fradkin, E.J. Ritter, W.J. Scott, James G. Wilson
1980	Jerold A. Last, Peter F. Moore, Otto G. Raabe, Brian K. Tarkington
1981	Yves Alarie, Martin Brady, Christine Dixon, Meryl Karol
1982	Melvin E. Andersen, Michael L. Gargas, Lawrence J. Jenkins, Jr., Robert A. Jones
1983	Henry D. Heck
1984	Erik Dybing, Sidney Nelson, Erik Soderlund, Christer Von Bahr
1985	Nobumasa Imura, Masae Inokawa, Kyoko Miura
1986	Calvin C. Wilhite, M.I. Dawson, K.J. Williams
1987	John Kao, Frances K. Patterson, Jerry Hall
1988	Debra L. Laskin, Sungchul Ji, Anne M. Pilaro
1989	R.G. Cuddihy, W.C. Griffith, Rogene F. Henderson, Joe L. Mauderly, Roger O. McClellan, M.D. Snipes, Ronald K. Wolff
1990	William P. Beierschmitt, Joseph T. Brady, John B. Bartolone, D. Stuart Wyand, Edward A. Khairallah, Steven D. Cohen
1991	Jay Babcock Silkworth, Daryl Cutler, LuAnn Antrim, Don Houston, Casimir Tumasonis, Laurence S. Kaminsky

Burroughs Wellcome Toxicology Scholar Award

1981-86	Alan P. Poland
1982-87	Curtis D. Klaassen
1983-85	R. Craig Schnell
1983-88	Frederick P. Guengerich
1984-89	Philip Guzelian
1985-90	I. Glenn Sipes
1986-91	Daniel Acosta
1987-92	Bruce D. Hammock, Richard P. Mailman
1988-93	Harihara M. Mehendale
1989-94	Stephen H. Safe
1990-95	Mahin D. Maines
1991-96	Robert A. Roth

GRADUATE STUDENT FELLOWSHIPS

CIBA-GEIGY Corporation Fellowships

1989	Timothy Zacharewski
1990	Mary Suzanne Stefaniak
1991	Donald Bjerke

Hazleton Laboratories Corporation Fellowship

1984	Patricia Ganey
1985	Kevin Gaido
1986	Lisa Naser
1987	Marjorie Romkes
1988	Caroline J. Decker
1989	Lorraine E. Twerdok
1991	Dale Morris

Hoffmann-La Roche, Inc. Fellowship

1987	Andrew G. King
1988	Dori J. Thomas
1989	Timothy J. Shafer
1990	Justin Lane Green
1991	Kathryn Guyton

The Procter & Gamble Company Fellowship

1979	Paul W. Ferguson
1980	Anthony P. De Caprio
1981	Cheng Wang
1982	Samson Chow
1983	Laurie Basting
1984	Philip Bartholomew
1985	Russell Esterline
1986	Leonard Sauers
1987	Randall Ruch
1988	Lawrence J. Dahm
1989	Christopher M. Weghorst
1990	Enrique Chacon
1991	Janice Thornton-Manning

Stauffer Chemical Company Fellowship

1987	Lydia R. Cox
1988	Hyo J. Kim

POST-DOCTORAL AND NEW INVESTIGATIVE FELLOWSHIPS

Colgate-Palmolive Post-Doctoral Fellowship Award In *In Vitro* Toxicology

1988	Ernest Bloom
1989	Gin Hsieh
1990	Dennis E. Chapman
1991	Anne Walsh

Air Force Office of Scientific Research Toxicology Grants

1989	Post-Doctoral Research Award	Douglas A. Dawson
1989	New Investigator Award	Karen McBee
1990	Post-Doctoral Research Award	Lori Rochelle
1990	New Investigator Award	Christopher Bradfield

ICI TRAVELING LECTURESHIP

1990	Robert I. Krieger, Joseph R. Landolph
1991	Sam Kacew

1991 SOCIETY OF TOXICOLOGY GRADUATE FELLOWSHIP AWARD RECIPIENTS' PRESENTATIONS AT 1992 ANNUAL MEETING

CIBA-GEIGY CORPORATION

Recipient: Donald Bjerke
#222—"Effects of In Utero Versus Lactational Exposure to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) on the Male Rat Reproductive System"

HAZLETON LABORATORIES CORPORATION

Recipient: Dale Morris
#260—"Serum Modulation of the Effects of TCDD on the In Vitro Antibody Response"

HOFFMANN-LA ROCHE, INC.

Recipient: Kathryn Guyton
#647—"Mechanisms of Butylated Hydroxytoluene Hydroperoxide-Stimulated Toxicity and Changes in Gene Expression in Mouse Epidermal Cell Line PE"

THE PROCTER & GAMBLE CORPORATION

Recipient: Janice Thornton-Manning
#1113—"Metabolism of 3-Methylindole by Vaccinia-Expressed Cytochrome P450 Enzymes"

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